

Final West Corridor Service Plan

2013



October 2012



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1 Introduction

1.1 Background & Focus

The West Corridor’s Light Rail Transit (LRT) line, scheduled to open in April 2013, will provide 12.1 miles of high capacity transit service between the Auraria Campus in downtown Denver and the Jefferson County Government Center in Golden. The West Rail Line, part of the regional FasTracks plan, will improve connectivity between downtown Denver, Lakewood, and Golden with frequent, high quality transit service seven days a week.

Along with the implementation of the new LRT line, a restructured West Corridor bus network is necessary in order to ensure the integration of West Corridor bus and rail services. The West Corridor Service Plan proposes a restructured bus service network capable of maximizing ridership growth while addressing the expanding mobility needs of West Corridor communities. Previous service development efforts, existing market conditions, and existing service performance are all important factors in the development of the service plan.

The West Corridor service area is roughly bounded to the east by downtown Denver, the City of Golden in the west, 44th Avenue in the north, and Jewell Avenue/Evans Avenue in the south. Portions of Denver, Edgewater, Lakeside, Lakewood, Mountain View, Wheat Ridge, and Golden comprise the study area.

The bus routes evaluated as part of this service plan include the following:

Service Class	Route(s)
CBD Local	1, 9, 16, 16Ltd, 20, 28, 30, 30Ltd, 32, 36, 36Ltd, 38, 44
Urban Local	3, 11, 14, 21, 29, 31, 51, 76
Suburban Local	17, 100
Express	2X, 5X, 6X, 87X, 100X, 116X
Regional	CV/CS/CX, EV/ES/EX, GS
skyRide	AF
Also	Previously discontinued Routes 4, 44Ltd, 49, 125, 93X, 119X

Table 1 - Current West Corridor Routes by Service Class

1.2 Relevant Studies

Previous studies detailing past West Corridor bus service planning efforts illustrate the evolution of service concepts. The recommendations presented in the West Corridor Service Plan are built off of the strengths from previous planning efforts, while also addressing more recent West Corridor service planning challenges:



- West Corridor Environmental Impact Study
- 2007 Denver West Corridor Transit Plan
- Lessons Learned from Previous RTD LRT Corridor Implementations
- Private and civic developments built or in design since the EIS was prepared
- Funding of the nearby Gold Line
- Service changes resulting from budget and demographic factors

1.2.1 West Corridor Environmental Impact Study (EIS) – 2004

The EIS developed for the West Corridor LRT project included a bus and rail operations plan. Key planning concepts from the EIS include:

- Elimination of 16Ltd service on Colfax Avenue due to duplication of the new LRT line.
- Through-routing of Rtes 30 and 31 on Federal Boulevard, providing improved service frequencies.
- Addition of several new Limited routes (e.g. Rtes 31Ltd, 76Ltd).
- Several Express routes are completely eliminated due to duplication of the new LRT line. The remaining Express routes are truncated and converted to rail station feeder routes.

1.2.2 2007 West Corridor Transit Plan

The 2007 West Corridor Transit Plan reviewed West Corridor transit services and developed bus service recommendations. The plan included a transit market assessment and a performance review of the current route network in the region. Key planning concepts from the 2007 West Corridor Transit Plan include:

- Rte 16Ltd is reconfigured to operate, with a shortened alignment from Golden to Federal Center Station/Oak Street Station.
- Elimination of all Express routes due to duplication of new LRT line and low productivity.
- Truncate Regional routes at Federal Center Station, providing a two-seat trip into downtown Denver.
- Restructured Federal Boulevard service – decreased frequency on Rte 30, discontinue Rte 30 trips south of Federal/Evans, operate all trips to Front Range Community College on Rte 31, introduce new Rte 33 between Westminster Mall and Gold Line.

1.2.3 Lessons Learned from Previous RTD LRT Corridor Implementations

RTD has experienced past successes while restructuring bus networks around newly implemented rail corridors. Specifically, the Southeast LRT Corridor offered many useful lessons:



- Restructuring the bus route network to support the new rail line increased bus ridership and created a stronger bus network.
- call-n-Rides provide a viable first/last mile service option in lieu of fixed route service, particularly in suburban markets. Some of RTD's strongest call-n-Rides operate within the Southeast Corridor and were implemented in conjunction with LRT in the Southeast Corridor. The RTD 2008 call-n-Ride Customer Satisfaction & Travel Characteristics market survey suggests call-n-Ride services have changed the predominant pattern to work commute-base trips when compared to services operated prior to the implementation of LRT.
- park-n-Rides experienced great success in suburban market areas, demonstrating RTD's ability to build a network with automobiles rather than around automobiles. A number of park-n-Ride facilities adjacent to the rail lines operate in excess of 95% capacity.
- Fixed route services proved to be unsustainable in some low density regions. Fixed route services operating within the Denver Tech Center and surrounding communities experienced poor performance due to low residential densities, poor access, and the desire for a more direct connection to rail service for travel patterns that fluctuate throughout the day.
- Directness of service is important in reconfiguring the bus network. It is important to consider alternative bus-only direct routes to downtown, particularly when trips require very long travel times. Rte P, for example, provides a lengthy one-seat ride into downtown where the rail-feeder travel model is less attractive.
- It is important to establish guiding principles and a framework for change as has been done in prior corridors implementation studies.

2 Current Transit Market Assessment

Analyzing and understanding the current West Corridor transit market is an integral part of the RTD West Corridor Preliminary Draft Service Plan. This market assessment will offer a market context for the performance of the existing RTD network within the West Corridor and highlight opportunities for RTD to continue to grow ridership.

An analysis of the following population characteristics helps identify densities of population and employment segments more oriented towards transit use.

These include:

- Population and Employment Density
- Youth Population
- College-Aged Population
- Senior Population
- Physically Disabled Population



- Economically Challenged
- Vehicle Access

Data used in the analysis includes 2000 Census and 2005 estimates of population and employment density developed by DRCOG. The following highlights the assessment that a background report provides in more detail.

2.1 Population Density 2005

Typically, higher population densities are more supportive of transit usage. In the West Corridor service area, high population densities are largely concentrated within the cities of Denver, Lakewood, and Golden (Map 1). The majority of density is focused along the Colfax Avenue, Federal Boulevard, Alameda Parkway, and Washington Avenue (Golden) corridors. These densities are supported by the presence of various large apartment complexes, nearby colleges, and the proximity of major employment centers.

Wadsworth Boulevard represents a clear transition from urban to suburban/exurban development in the West Corridor. East of Wadsworth Boulevard, population densities consistently measure above 15 people per acre and increase to above 24 people per acre closer to downtown Denver. Conversely, west of Wadsworth Boulevard, development becomes increasingly dispersed, with most neighborhoods measuring below 15 people per acre. Some isolated pockets measure above 36 people per acre, but they lack continuity with the nearby urban environment. Many neighborhoods in the western portion of the study area also lack the basic pedestrian amenities necessary to support an urban transit network (e.g. sidewalks). The nodal development west of Wadsworth Boulevard differs drastically from the corridor-based development typical of communities closer to downtown Denver, particularly when considering suitable transit service options.

2.2 Employment Density 2005

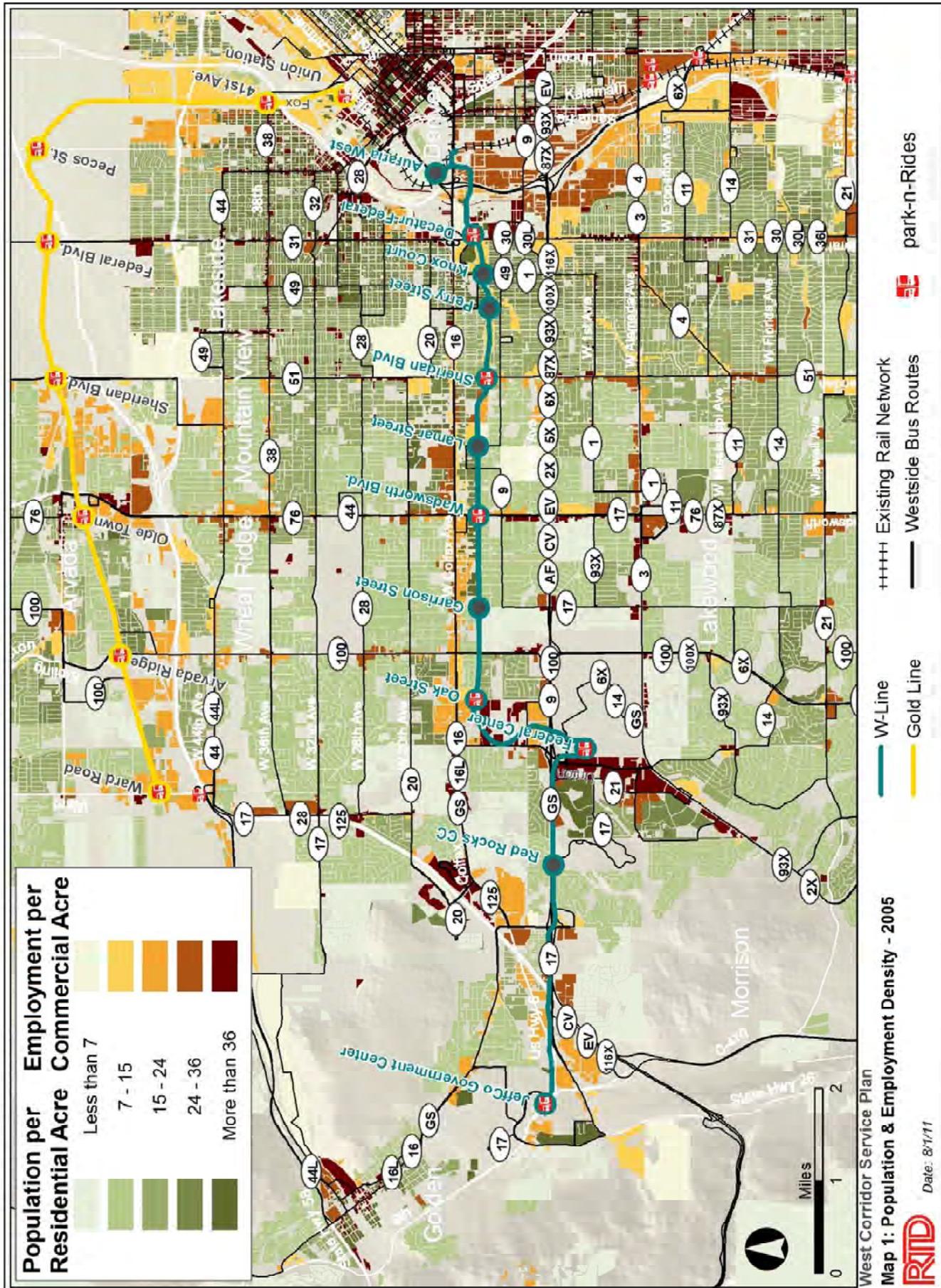
Areas displaying high employment density are significant trip generators for RTD passengers. Typically, high employment densities are concentrated in Denver, Golden, and Lakewood (Map 1):

- **Denver** With over 100,000 employees, downtown Denver represents the highest concentration of workers served by the West Corridor. Downtown jobs are generated by major government, commercial, retail, and entertainment employers. Outside of downtown, high levels of retail and commercial employment occurs along the Colfax Avenue and Federal Boulevard corridors. Significant employment density also exists southwest of downtown where numerous manufacturing, industrial, and retail employers are located.
- **Lakewood** Significant employment densities exist along the Colfax Avenue, Wadsworth Avenue, and Jewell Avenue corridors in Lakewood, supported by the



Lakewood Commons/Belmar shopping centers, the Jewell Square Shopping Center, the Colorado Mills Shopping Center, and other major retail centers. High employment density is also found along Union Boulevard, surrounding the Denver Federal Center. The Federal Center employs a significant concentration of federal employees, with over 6,000 employees on site. The newly relocated St. Anthony's Hospital is also located on the Federal Center site. On the western edge of Lakewood, the Denver West Office Park generates over 36 employees per acre.

- **Golden** Dense employment in Golden is largely located in downtown along the Washington Avenue corridor. The Colorado School of Mines, New Global Telecom, CoorsTek, and the USGS National Earthquake Information Center (NEIC) are each found along this corridor. Southeast of downtown Golden, the Jeffco Government Center, National Renewable Energy Laboratory (NREL), and Denver West Marriot also contribute to the high employment density in the area.



Map 1 - Population & Employment Density - 2005

3 Current Service Evaluation

3.1 Transit Route Network

The West Corridor is served predominantly by Central Business District (CBD) and Urban Local services along major arterials (Figure 2). Corridors with high commute demand (Colfax Avenue, Federal Boulevard, and 44th Avenue) were supplemented with peak-only Limited overlays in addition to the underlying Local service. CBD Local and Limited routes provide direct, one-seat trips into downtown Denver, while Urban Local routes provide connections to the greater RTD network outside of downtown. Suburban Local routes offer fixed route transit coverage to some of the less developed communities in the far reaches of the West Corridor. Express and Regional routes provide peak-only service between West Corridor communities, outlying communities, and employment centers in downtown Denver and the Denver Federal Center via US-6. skyRide service provides a one-seat ride from the West Corridor to the Denver International Airport and downtown Denver.

3.2 Transit Service Levels

Table 2 - Current West Corridor Transit Route Network and Map 2 both display current West Corridor combined peak frequencies by corridor. Each illustrates how service levels are designed to best meet market demand.

Service frequencies in the West Corridor are designed to match the varying market demand within the study area, from urban to suburban to exurban. The strongest high frequency corridors operate on major urban roads closer to downtown, while more tailored, less frequent services are provided to suburban and exurban areas with more limited transit demand further west. This service design effectively creates a high-frequency, spontaneous use grid network west of downtown Denver to Wadsworth Boulevard, with more focused, less-frequent nodal services providing coverage west of Wadsworth Boulevard. The abundance of peak-only Express services in the southwest portion of Lakewood is representative of the commute-oriented transit market typical of the outlying West Corridor communities. Conversely, within the core network, frequent all-day services operate on major urban arterials (e.g. Colfax and Federal) to facilitate all-day spontaneous use travel.

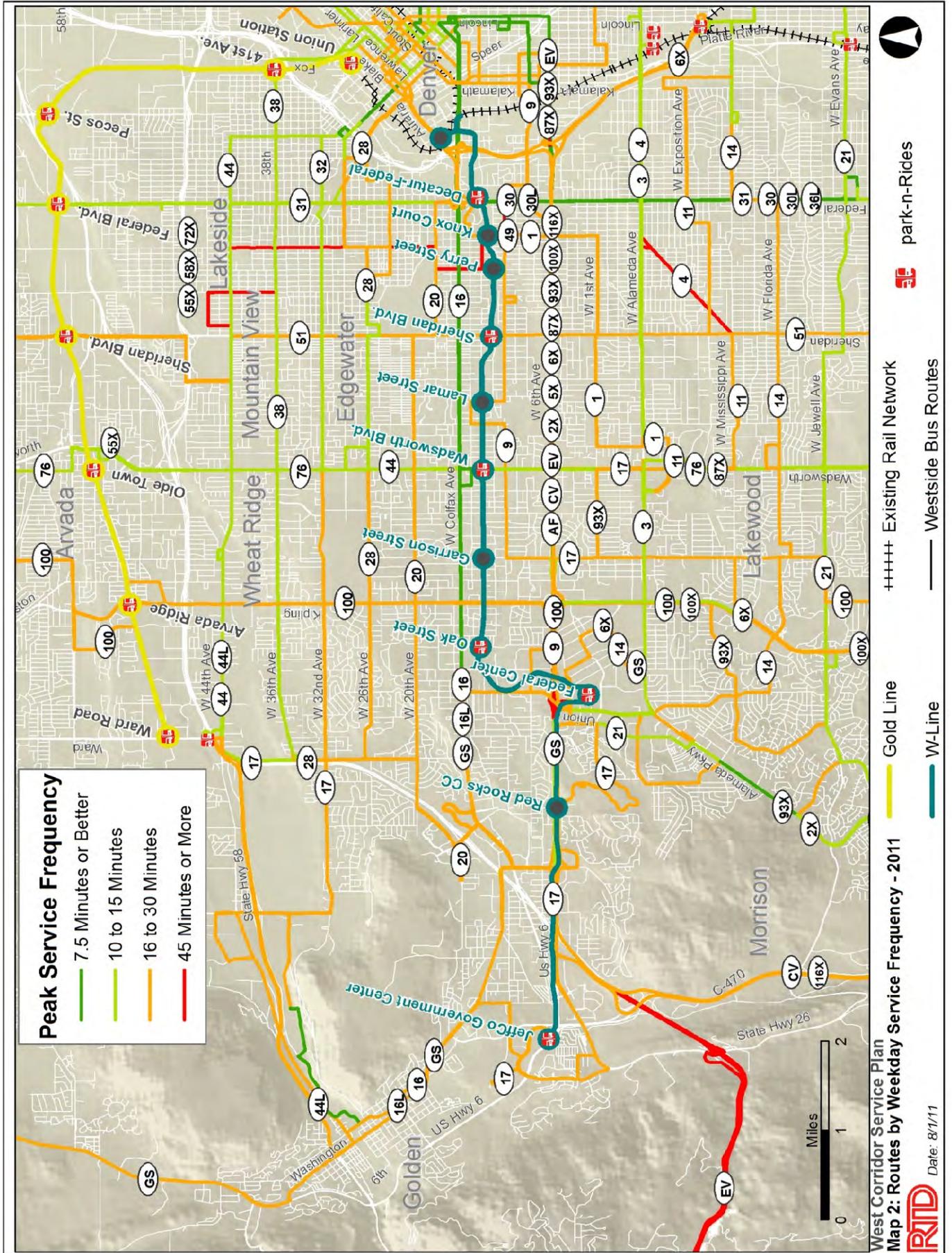
Table 2 - Current West Corridor Transit Route Network provides additional detail giving the service class, description, peak and off-peak frequencies, and service span for all routes considered a part of the West Corridor bus route network.



Final West Corridor Service Plan 2013

Current West Corridor Transit Route Network					
Route	Service Class	Description	Frequency		Span of Service
			Peak	Off-Peak	
1	CBD Local	West 1st Avenue	15	30	5:07 - 23:19
3	Urban Local	Alameda Crosstown	15	30	4:27 - 25:04
4	<i>Urban Local</i>	<i>Morrison Road</i>	45	-	6:24 - 8:53 / 15:18 - 18:10
9	CBD Local	West 10th Avenue	30	30	5:16 - 20:59
11	Urban Local	Mississippi Avenue	30	30	4:23 - 24:17
14	Urban Local	West Florida	30	30	5:22 - 19:17
16	CBD Local	West Colfax	15	15	4:23 - 26:00
16L	Limited CBD Local	West Colfax Limited	15	30	5:08 - 21:37
17	Suburban Local	Jeffco	30	30	5:05 - 22:59
20	CBD Local	20th Avenue	10	15	5:08 - 24:24
21	Urban Local	Evans Crosstown	15	30	4:17 - 24:51
28	CBD Local	28th Avenue	15	30	4:56 - 25:21
30	CBD Local	South Federal	15	15	4:33 - 22:05
30L	Limited CBD Local	South Federal Limited	30	-	5:58 - 9:20/14:58 - 18:27
31	Urban Local	Federal Crosstown	15	15	4:18 - 26:27
32	CBD Local	W. 32nd Avenue/City Park	15	30	5:01 - 24:06
36L	Limited CBD Local	Littleton via Ft. Logan Limited	30	-	4:52 - 8:48 / 14:20 - 19:16
38	CBD Local	38th Avenue	15	30	4:49 - 25:56
44	CBD Local	44th Avenue	15	30	4:39 - 25:42
44L	Limited CBD Local	West 44th Limited	30	-	5:50 - 7:44/16:06 - 18:03
49	<i>Urban Local</i>	<i>North Lowell</i>	60	60	6:20 - 16:50
51	Urban Local	Sheridan Crosstown	30	30	4:42 - 24:08
76	Urban Local	Wadsworth Crosstown	15	15	4:26 - 24:30
100	Suburban Local	Kipling Crosstown	30	30	5:12 - 18:58
125	<i>Urban Local</i>	<i>Denver West</i>	30	60	6:06 - 24:08
2X	Express	Morrison Express	25	-	4 AM trips / 4 PM trips
5X	Express	FCS Express	25	-	8 AM trips / 4 PM trips
6X	Express	I-25 & Broadway/FCS Express	30	-	8 AM trips / 8 PM trips
87X	Express	South Wadsworth Express	30	-	2 AM trips / 2 PM trips
93X	<i>Express</i>	<i>Green Mountain Express</i>	35	-	3 AM trips / 3 PM trips
100X	Express	South Kipling Express	35	-	4 AM trips / 5 PM trips
116X	Express	South Simms Express	30	-	5 AM trips / 5 PM trips
119X	<i>Express</i>	<i>Union Express</i>			
CV/CS/CX	Regional	Pine Junction/Conifer/Denver	30	-	3 AM trips / 2 PM trips
EV/ES/EX	Regional	Evergreen/Aspen Park/Denver	35	-	3 AM trips / 2 PM trips
GS	Regional	Golden/Boulder	35	-	12 AM trips / 10 PM trips
AF	skyRide	FCS/Downtown/DIA	35	60	3:14 - 25:37

Table 2 - Current West Corridor Transit Route Network



Map 2 - Routes by Weekday Service Frequency - 2011



3.3 Transit Passenger Facilities

RTD currently provides numerous transit passenger facilities throughout the system including rail stations, transfer centers, and park-n-Rides. Such facilities assist passengers in traveling throughout the metro area by providing connections to multiple RTD services. Existing transit passenger facilities within the West Corridor service area include transfer centers and a park-n-Ride:

Transit Passenger Facilities	
Transfer Center	park-n-Ride
Federal/Colfax	
	Cold Spring replaced by Federal Center Station
Federal/Evans	
Lakewood Commons (Wadsworth/Alameda)	
Applewood Village	
Golden	
Green Mountain Plaza	

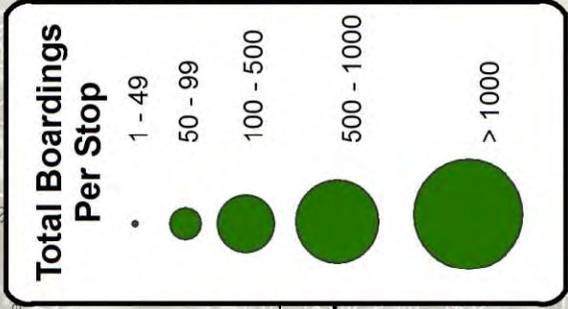
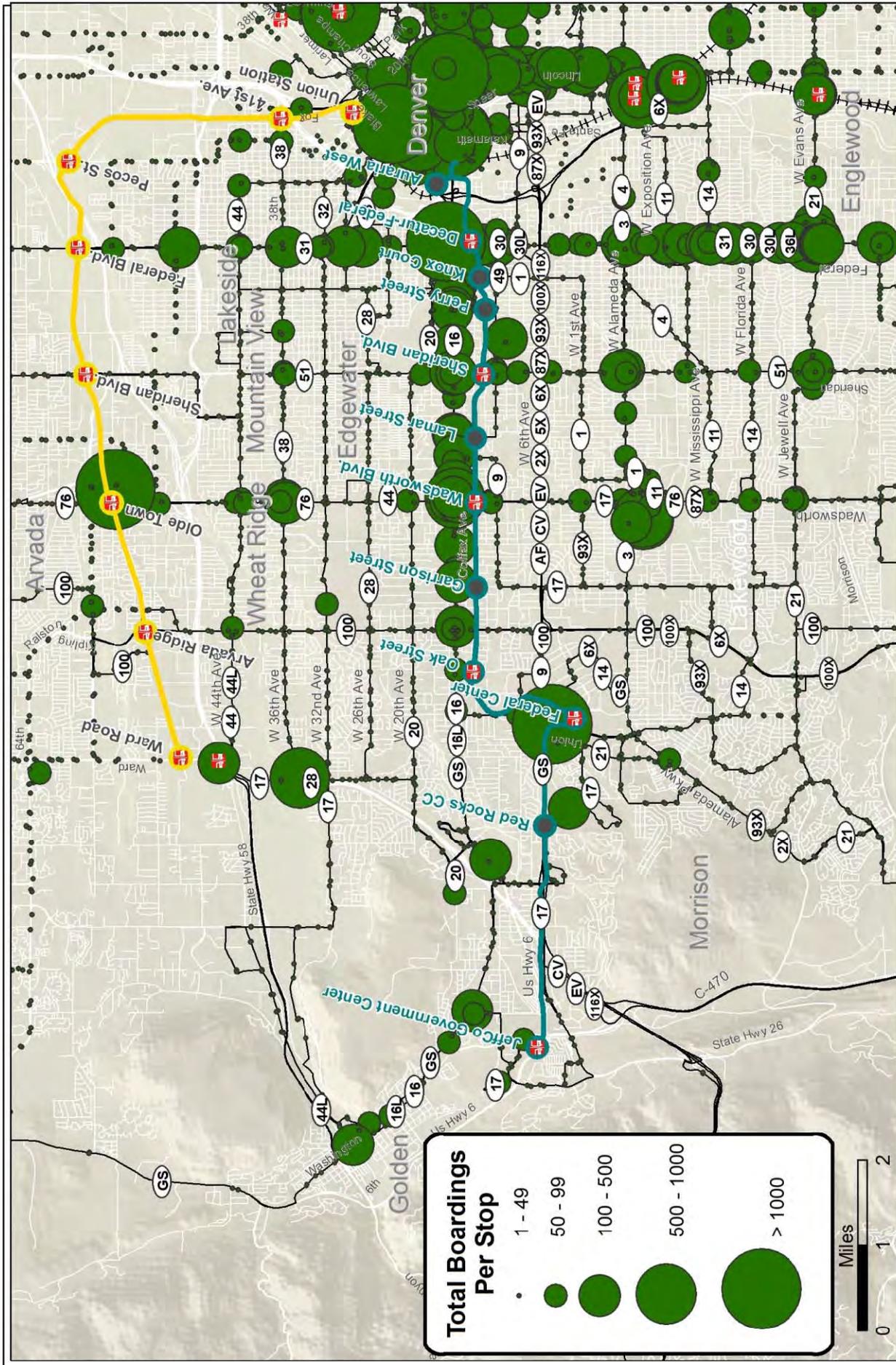
Table 3 - Transit Passenger Facilities

With the implementation of LRT, 11 new stations will enter operation in the West Corridor. The rail stations will have a significant impact on existing passenger facilities, particularly at the Cold Spring park-n-Ride and Federal/Colfax transfer center.

- Cold Spring park-n-Ride is replaced by a major bus-to-rail transfer point at the new Federal Center Station, while still providing park-n-Ride capacity for commuters traveling into downtown Denver.
- Passenger operations at the Federal/Colfax Transfer Center will shift to the new Decatur-Federal rail station, incurring significant operational changes for routes utilizing the center. The transfer center will be retained as a support facility for the many services converging on the Decatur-Federal Station.

3.4 Ridership

Local and Limited routes average weekday passenger boardings total 56,001 within the West Corridor. West Corridor Express and Regional services generate 1,184 and 3,374 boardings, respectively. Map 3 displays the average weekday boardings by individual stop.



West Corridor Service Plan
 Map 3: Weekday Boardings - 2010



Date: 8/4/11

+++++ Existing Rail Network
 — Westside Bus Routes



park-n-Rides



Map 3 - Weekday Boardings - 2010



3.4.1 Ridership Patterns

Weekday Boardings

Boarding activity (Map 3) in the West Corridor is largely concentrated in the core grid network from downtown Denver to Wadsworth Boulevard. In the core grid, frequent bus services allow for linear travel along corridors in addition to travel throughout the greater RTD network via transfers between frequent grid connections. Colfax Avenue and Federal Boulevard generate the greatest volumes of boarding activity in the core grid network, aided by the frequent connections provided at the Federal/Colfax transfer center. These corridors typically have much higher population and employment densities with well-connected street patterns, demonstrating that densities and street patterns significantly impact transit's success in communities.

West of Wadsworth Boulevard, ridership patterns become increasingly nodal as major boarding activity occurs almost entirely at a few isolated hubs. Concentrations of boarding activity occur at locations where connections to the core grid network are available, including Cold Spring park-n-Ride (Federal Center Station), Applewood Village transfer center, and downtown Golden. This nodal focus emerges as population densities grow smaller and transit services become more tailored to better connect suburban markets with transfer links to the greater network.

Subsidy per Boarding by Route

Subsidy per boarding measures the financial effectiveness of a route by comparing the performance of a route (boardings) against the net cost incurred upon RTD to operate the route (subsidy). Routes displaying low subsidy per boardings combine efficient and effective service with higher ridership generation.

Figure 1 - Subsidy per Boarding below displays weekday subsidy per boarding for all West Corridor routes. The top performers in terms of subsidy per boarding strongly correlate with those displaying the highest level of productivity: Rtes 30, 16, 36Ltd, and 16Ltd. The most financially effective routes operate in the core grid network and require well below \$3.00 in subsidy per boarding. More costly services, including most Express and Regional routes, require over \$6.00 in subsidy per boarding due to high operating costs and relatively low fare revenue generated from ridership.

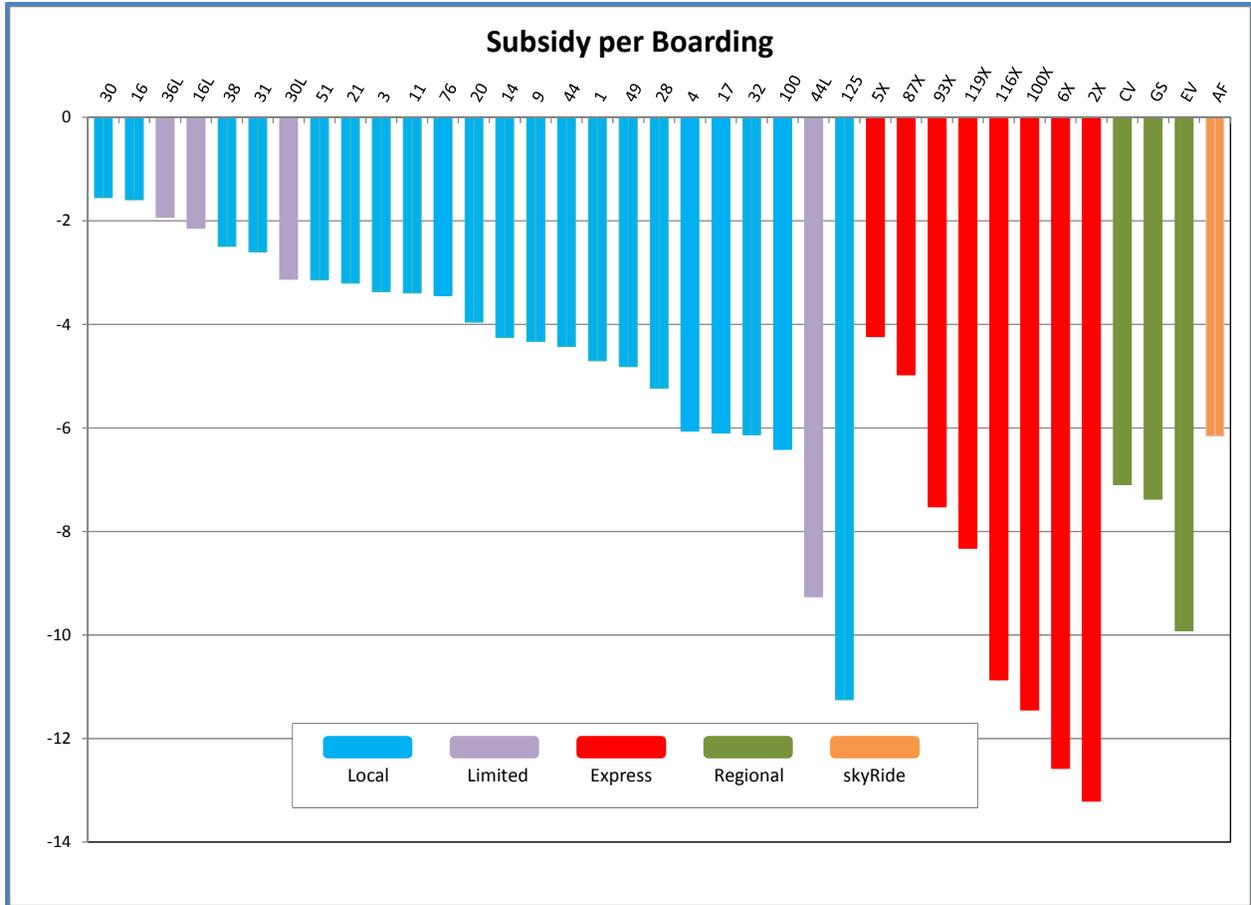


Figure 1 - Subsidy per Boarding - 2010

3.4.2 Subarea Analysis

In order to gain a better understanding of the differentiation in Local and Limited service performance throughout the West Corridor, the service area has been segmented into three geographic subareas for a more detailed analysis:

- Inner Segment – Downtown Denver to Sheridan Boulevard
- Middle Segment – Sheridan Boulevard to Kipling Street
- Outer Segment – Kipling Street to Golden

These subareas were segmented in relation to population and employment densities, major ridership patterns within the West Corridor, and changing development patterns.

Ridership by Subarea

Boarding activity by subarea illustrates the decreased transit use further west from downtown Denver outside of the core grid network:



- Inner Segment – Generates 65 percent of Local and Limited weekday ridership in the West Corridor:
 - Major ridership generators include Rtes 16, 30, 31, and 51
 - Over 36,600 daily boardings in the inner segment
- Middle Segment – Generates 23 percent of Local and Limited weekday ridership in the West Corridor:
 - Major ridership generators include Rtes 16, 16Ltd, and 76
 - Over 13,000 daily boardings in the middle segment
- Outer Segment – Generates 11 percent of Local and Limited weekday ridership in the West Corridor:
 - Major ridership generators include Rtes 17 and 100
 - Over 6,000 daily boardings in the outer segment

The majority of West Corridor boarding activity occurs within the inner and middle segments, where the grid network provides higher frequencies, including spontaneous use frequencies along major corridors. Further west in the outer segment, where bus service fulfills more of a coverage role, boarding activity accounts for just 11 percent of the overall West Corridor boarding activity. This significant decrease in boarding activity suggests an opportunity for alternative service delivery methods besides fixed route. Resource savings can be reinvested in the core grid network, benefitting a majority of West Corridor RTD passengers.

Figure 2 - Local Weekday Ridership by Subarea displays weekday boardings by West Corridor subarea.

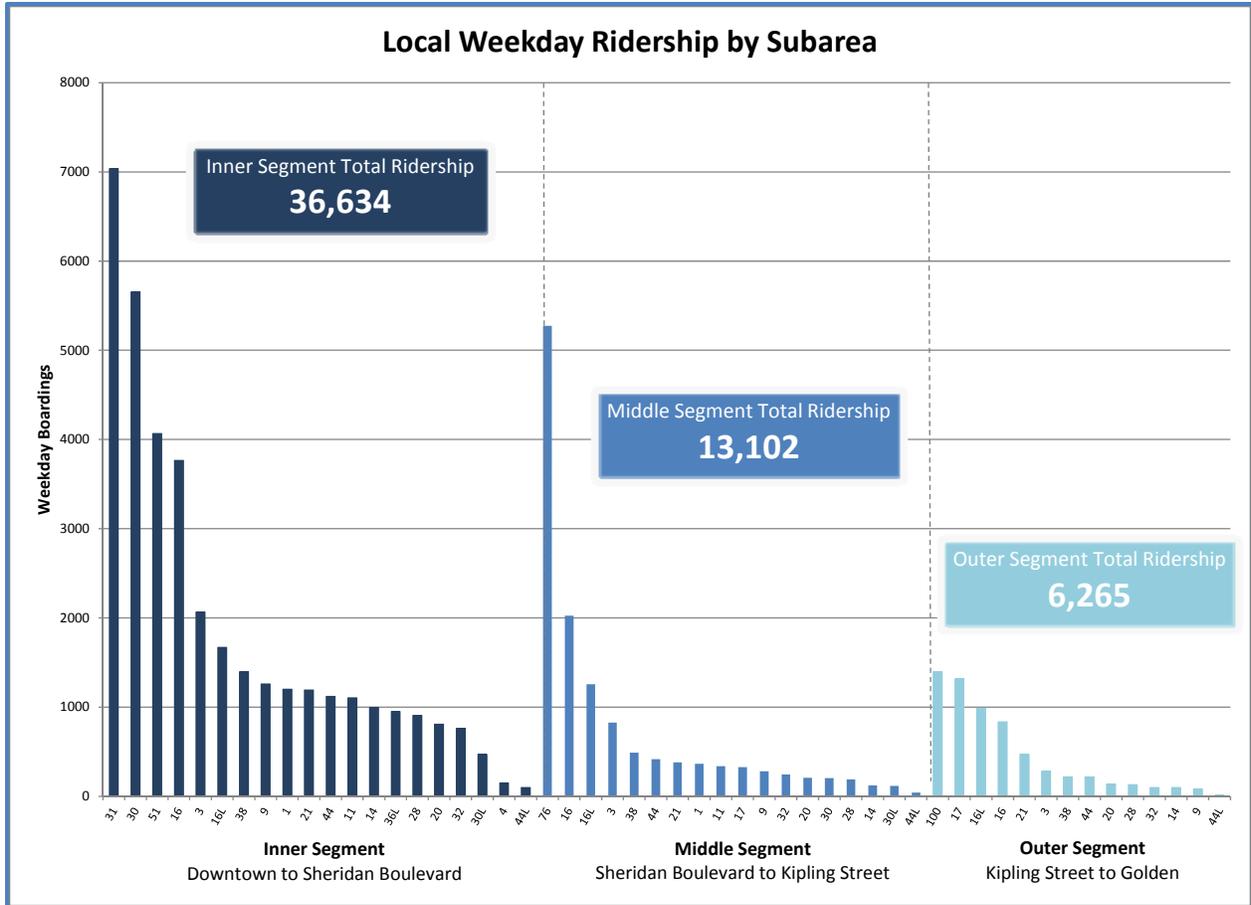


Figure 2 - Local Weekday Ridership by Subarea - 2010

Productivity by Subarea

Boardings per in-service hour by subarea indicate how well RTD is matching transit service levels to varying market performance. While many West Corridor routes are operating within RTD service performance standards, certain segments of these routes perform well below the standards.

- Inner Segment – Displays the strongest productivity with a Local and Limited weekday average of 47 passenger boardings per revenue hour.
 - Local Rtes 3, 30, and 21 and Limited Rte 16L each experience 60 or greater boardings per revenue hour in the subarea.
- Middle Segment – Experiences moderate productivity with a Local and Limited weekday average of 36 passenger boardings per revenue hour in the subarea.
 - Local Rte 16 and Limited Rte 16L each show greater than 60 passenger boardings per revenue hour in the subarea.



- Outer Segment – Low productivity with a Local and Limited weekday average of 25 passenger boardings per revenue hour in the subarea.
 - Local Rte 16, Limited Rte 16L, and Local Rte 38 each display 30 or greater passenger boardings per revenue hour in the subarea.

East-west routes operating along secondary corridors (e.g. Rtes 20, 28, 32, and 44) display the lowest productivity in each market subarea, particularly in the outer segment where they measure below 20 boardings per revenue hour. The substantial decrease in productivity for these routes compared to their respective inner and outer segments suggests that the outer segments should be reevaluated for alternative service options.

Generally, RTD provides appropriate transit service levels relative to the performance in each subarea. Compared to the wide range of total boardings generated in each subarea, segment productivity experiences significantly less differentiation. For example, the inner segment generates nearly twice the boardings as the middle segment, while only displaying 30 percent greater boardings per revenue hour.

Figure 3 - Local Service Weekday Productivity by Subarea displays weekday passenger boardings per revenue hour by West Corridor subarea.



- Key activity corridors include Federal Boulevard, Colfax Avenue, Sheridan Boulevard, Wadsworth Boulevard, and Alameda Avenue.
- Weekday boardings are greatest on Rtes 31, 16, 21, 30, and 76. Each experiences 5,000 or more boardings per day and operates on major corridors within the grid network.
- Weekday productivity is highest on Rtes 30, 16, 16L, 31, and 30L. Each displays greater than 45 passenger boardings per revenue hour and operates on major corridors within the core grid network.
- The inner segment subarea generates the majority of West Corridor weekday ridership and displays the highest productivity, warranting the highest level of resource investment. Ridership and productivity significantly decrease on route segments to the west, particularly on routes operating on secondary corridors in the outer segment.

4 LRT W-Line

The planned West Rail Line will provide high capacity transit service between downtown Denver and the Jefferson County Government Center. The West Corridor Service Plan will develop a comprehensive bus network capable of a seamless integration with the LRT service.

4.1 Service Levels

The West Corridor LRT line will open with the following levels of service with service fully available from 5:00 AM to 1:00 AM (the subsequent day).

West Rail Line Service Levels			
(Denver Union Station to Federal Center)			
Weekday		Weekend	
Peak	7½ min	Peak	15 min
Base	15 min	Base	15 min
Late Evening/Early AM	30 min	Late Evening/Early AM	30 min
(Federal Center to JeffCo)			
Weekday		Weekend	
Peak	15 min	Peak	15 min
Base	15 min	Base	15 min
Late Evening/Early AM	30 min	Late Evening/Early AM	30 min

Table 4 – W-Line Service Levels

For the West Rail W-Line, two-car trains will operate from the opening day, with three-car trains as necessary for peak loads and special events.



4.2 Stations & Parking

Table 5 - West Rail Line Station Facts on the following page provides an overview of West Corridor stations including their location, amenities, and parking capacities at each station.



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West Rail Line Station Facts			
Station	Details	Location	Parking Spaces
Auraria West Station	Currently operates as part of RTD's C/E Lines and will be relocated 300 feet to the northwest. Will act as a transfer plaza to the Central Corridor. Sidewalks to the Auraria Campus. kiss-n-Ride drop off on 5th Street east of the station.	West of 5th Street, south of Walnut Street, and north of Colfax Avenue.	0
Decatur-Federal Station	The train will travel under the new Federal Blvd bridge as it heads west from the Federal/Decatur Station. There will be shared parking with Invesco Field located to the north and east of the station. Bus drop offs on Federal Boulevard (N-S routes) and bus pullouts on Howard (E-W routes). Ramp from the west side of Federal leads customers under the new Federal Boulevard bridge to the station platform. Additional sidewalks along Howard Place to the bus bays.	East of Federal Boulevard, south of Howard Place at approximately 12th Avenue.	1,900
Knox Station	Two bus pullouts with shelters to be constructed along either side of Knox Court, just south of trackway. kiss-n-Ride drop off on Knox south of the station. Ramps and sidewalks connect the station to the neighborhood.	Directly west of Knox Court, north of the trackway.	0
Perry Station	Two side platforms. Bike path located north of the station.	West of Perry Street and north of 12th Avenue in Denver.	0
Sheridan Station	Shelter for station is roadway above. Parking located in new structure southwest of the station. New sidewalks added on either side of Sheridan Boulevard. Elevator and stair access from Sheridan Boulevard to the station.	Either side of reconstructed Sheridan Avenue, at approximately 12th Street.	800
Lamar Station	Bike path located north of the station.	East of Lamar Street and north of 13th Avenue in Lakewood.	0
Lakewood-Wadsworth Station	Bike path that bridges Wadsworth Boulevard just north of the station. Elevators and stair access from both sides of Wadsworth Boulevard to the station. park-n-Ride planned northeast of station.	Over top of Wadsworth Boulevard, north of 13th Avenue in Lakewood.	1,000
Garrison Station	Added sidewalks along Garrison Street from Colfax Avenue to 9th Avenue.	East of Garrison Street and north of 13th Avenue in Lakewood.	0
Oak Station	park-n-Ride west of Oak Street at north end of Lakewood Industrial Park. New access road to be constructed between Quail Street and Oak Street. Bike path located north of station. kiss-n-Ride drop off provided.	West of Oak Street and north of 13th Avenue.	200
Federal Center Station	Station will have two side platforms and ramps and sidewalks that will connect the station to Union Boulevard via 2nd Place and Center Street. Parking will be located south of the station, north of St. Anthony's Hospital. Access to the station and to park-n-Ride facility will be from Union Boulevard via 2nd Place and Center Street or via Routt Street - accessible from 4th Street and North Avenue.	North of 2nd Avenue, east of Union Boulevard, north of St. Anthony's Hospital.	1,000
Red Rocks Station	Walk-up station. New sidewalks installed from Arbutus Street to Flora Street and from Arbutus Street to the east (on the south side of frontage road). Kiss-n-Ride drop off on Arbutus Street south of the station.	South side of 6th Avenue, between 6th Avenue and frontage road at Arbutus Street.	0
Jeffco Government Center-Golden Station	The West Corridor end-of-line station. The station will be directly adjacent to the new parking structure. Bike path located just to the south and east of the station. A kiss-n-Ride drop-off will be along the bus loop next to the structure. Parking located in a new structure on the Jeffco campus, with 135 of the parking spaces dedicated to Jeffco employees.	Jefferson County Government Center, north of 6th Avenue and west of Johnson Road.	835
Total			5,735

Table 5 - West Rail Line Station Facts



4.3 Ridership

Table 6 - West Corridor Projected Ridership by Station below shows projected 2025 average weekday passenger boardings for each West Corridor station. The 2013 opening day ridership will be less.

West Rail Line Projected Ridership by Station	
Station	2025 Average Weekday Estimated Activity*
Auraria West Station	-
Decatur-Federal Station	9,900
Knox Station	1,200
Perry Station	700
Sheridan Station	3,800
Lamar Station	300
Lakewood-Wadsworth Station	7,000
Garrison Station	1,100
Oak Station	3,000
Federal Center Station	5,200
Red Rocks Station	2,800
Jeffco Government Center-Golden Station	1,100
Total	31,100

**2025 projections taken from West Corridor Final EIS - Table 4-2 with 5,000 boardings removed to account for intracorridor trips.*

Table 6 - West Corridor Projected Ridership by Station

4.4 LRT Resource Requirements

Table 7 - W-Line Opening Day Resource Requirements below shows LRT resource requirements for opening day of the West Rail Line.

W-Line Opening Day Resource Requirements					
From	To	Day Type	Annual Revenue		
			Car Miles	Train Hours	Car Hours
Jeffco	DUS	Weekday	1,978,000	45,512	127,434
		Saturday	205,000	6,258	12,516
		Sunday	229,000	6,980	13,961
Total			2,412,000	58,750	153,911

Table 7 - W-Line Opening Day Resource Requirements

5 Proposed Service Plan

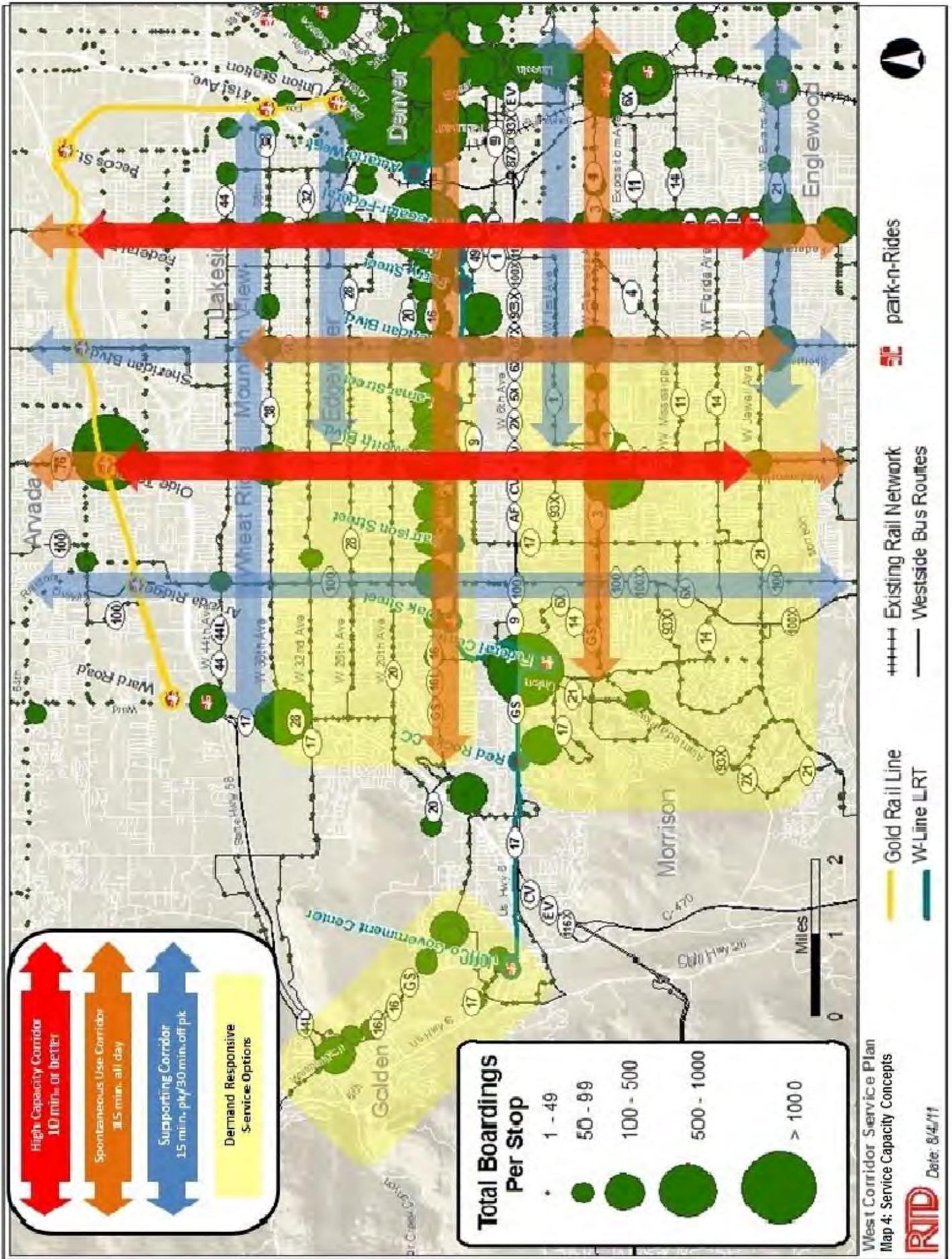
5.1 Key Planning Principles

The West Corridor plan is based on the following guiding principles. Map 4 illustrates the service planning concepts.

- **Develop a bus network that will effectively integrate with the new West Corridor LRT line.** Given the significant investment in high capacity West Corridor LRT service, the service plan aims to orient the supporting West Corridor bus network around the LRT line. A key aspect of this approach is to encourage line haul travel on LRT, while supplying/distributing riders from LRT stations with improved local and community bus and call-n-Ride services.
- **Reinvest available resources towards service improvements in the core grid network.** After the implementation of LRT, core grid services will comprise the underlying support network in the West Corridor. Recognizing additional transit demand (both LRT and bus) generated by the future rail line, improving service levels and capacity along major grid corridors is necessary to accommodate the growing transit market and to foster spontaneous use of the integrated bus and LRT network. Figure 5.1 displays conceptual frequencies for routes operating in the West Corridor.
- **Rationalize service to optimize available resources.** Market and service performance analyses illustrated where West Corridor bus services are most successful and well-utilized. Focusing available resources for improvements on these segments ensures that RTD will experience maximum ridership per resource provided.
- **Align service with current market demand and implement demand response service delivery models where appropriate.** In the Southeast Corridor implementation, RTD has experienced success with the introduction of flexible low-cost service delivery options in low demand markets (e.g. call-n-Ride service). Given the low demand nature of significant portions of the West Corridor service area, introducing call-n-Ride services allows RTD to maintain transit service coverage in low-demand areas more cost-effectively than operating regular fixed route service
- **Restructure long distance trips to utilize LRT.** Replacing long distance one seat trips with a combination of line haul LRT and short first mile/last mile bus services service offers benefits to both RTD and RTD riders. Replacing existing Express services allows for the operation of more cost-effective short range services for first mile/last mile pick-up/distribution, while concentrating the trunk line portion of trips on high-capacity LRT. Depending on their destinations, riders should experience improved travel times and enhanced schedule reliability, as LRT's exclusive right-of-way allows vehicles to bypass freeway traffic congestion that typically impedes highway-based bus services. This approach worked to



successfully grow overall ridership in similar circumstances when LRT was introduced in the Southeast Corridor.



Map 4 - Service Capacity Concepts



- **Maintain the quality of service for RTD customers.** The service plan aims to increase opportunities to spontaneously use the integrated system, minimize the number of transfers required to complete a trip, provide comparable or improved travel times from existing services, and provide access to major destinations throughout the service area.
- **Integrate future West Corridor bus services with FastConnects timed transfer hubs.** FastConnects hubs use timed transfers where transit services are specifically scheduled in order to minimize passenger wait time for connecting services. Several FastConnects hubs are located in the West Corridor area, including Federal/Evans Transfer Center, Lakewood Commons, Federal Center Station, Jeffco Government Center-Golden Station, and Applewood Transit Center. The proposed West Corridor bus network will utilize these FastConnects hubs to facilitate regional travel through timed transfer connections.

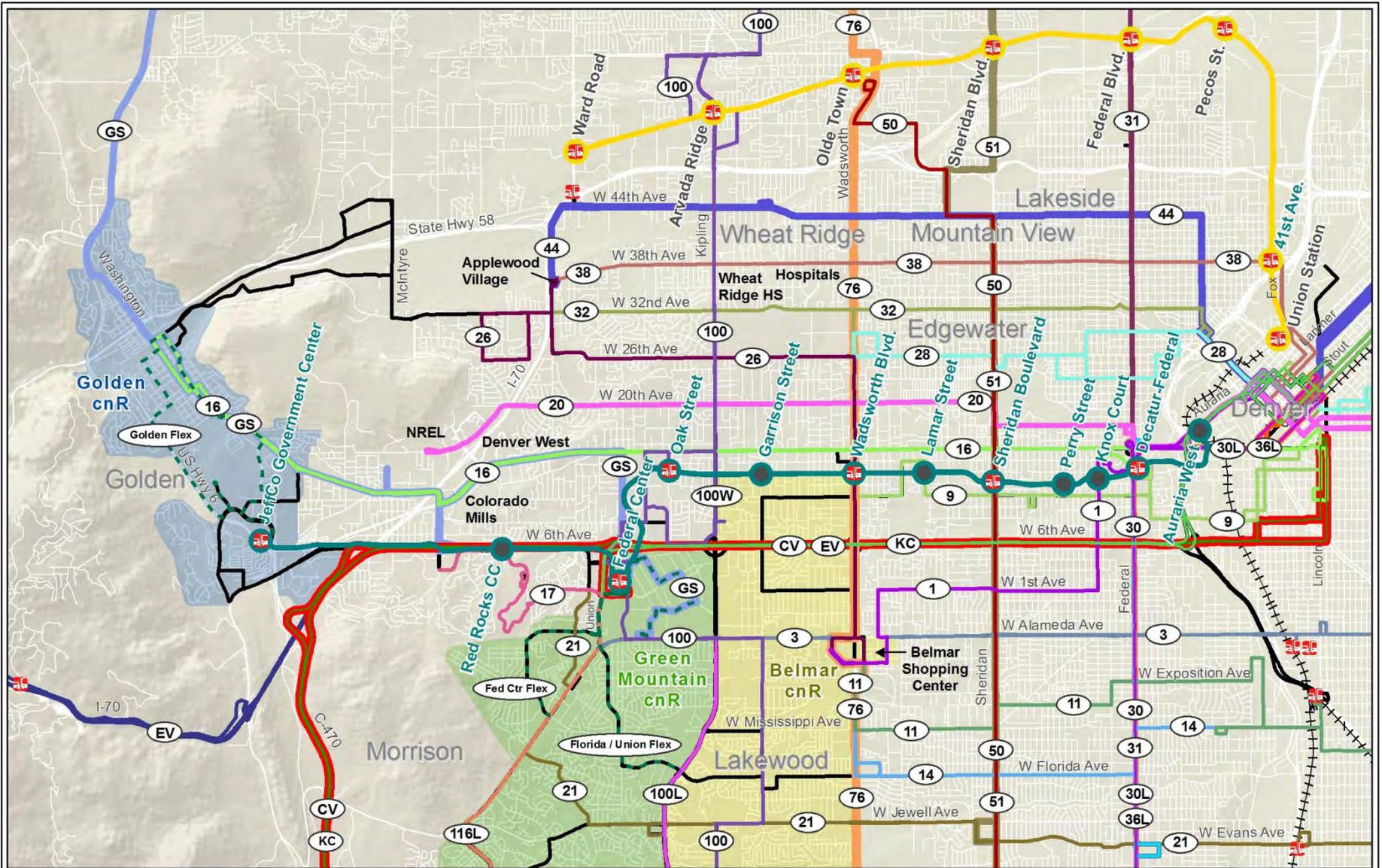
5.2 West Corridor Bus Service Recommendations

West Corridor bus service recommendations are based on previous West Corridor planning efforts and additional market and service analyses. The following recommendations were developed with the intention to fulfill the guiding principles and enhance mobility in the West Corridor upon the implementation of LRT service.

The recommendations are presented in three sections based on their respective network roles:

- North-South Route Recommendations
- East-West Route Recommendations
- Demand Response Service Recommendations

Table 8 - Service Design Strategies summarizes the service design strategies for the proposed West Corridor bus network. Map 5 provides an overview of proposed bus and call-n-Ride services. It shows all portions of discontinued bus service in black, much of which is replaced by call-n-Ride. The following by Maps 6, 7 and 8 provide close-ups of the three segments.



West Corridor Service Plan
 Map 5: Proposed Routes

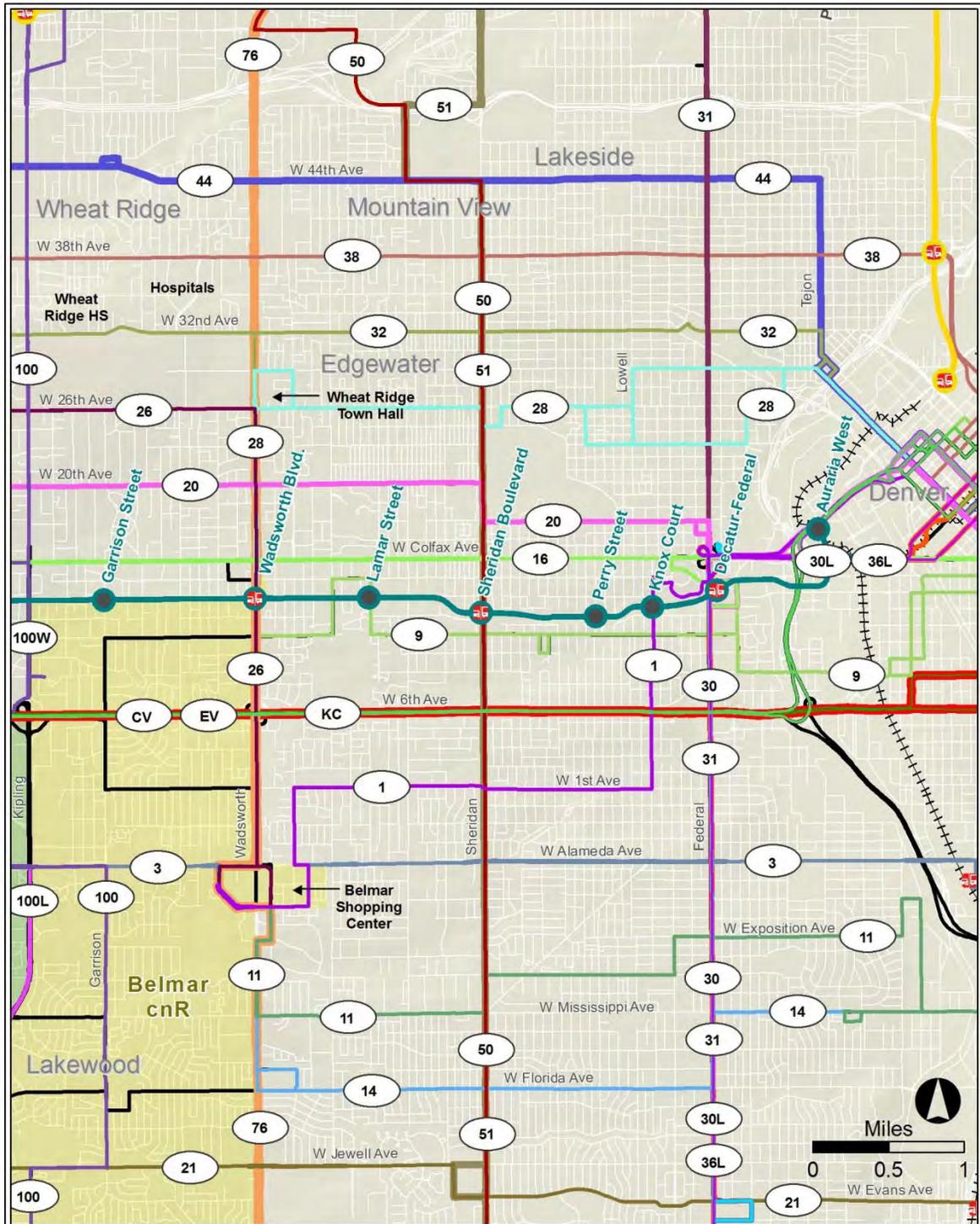


Date: 11/5/12

- W-Line
- Gold Line
- - - - Existing Rail Network
- Discontinued Routes
- + park-n-Rides



Map 5 - Proposed Routes



West Corridor Service Plan

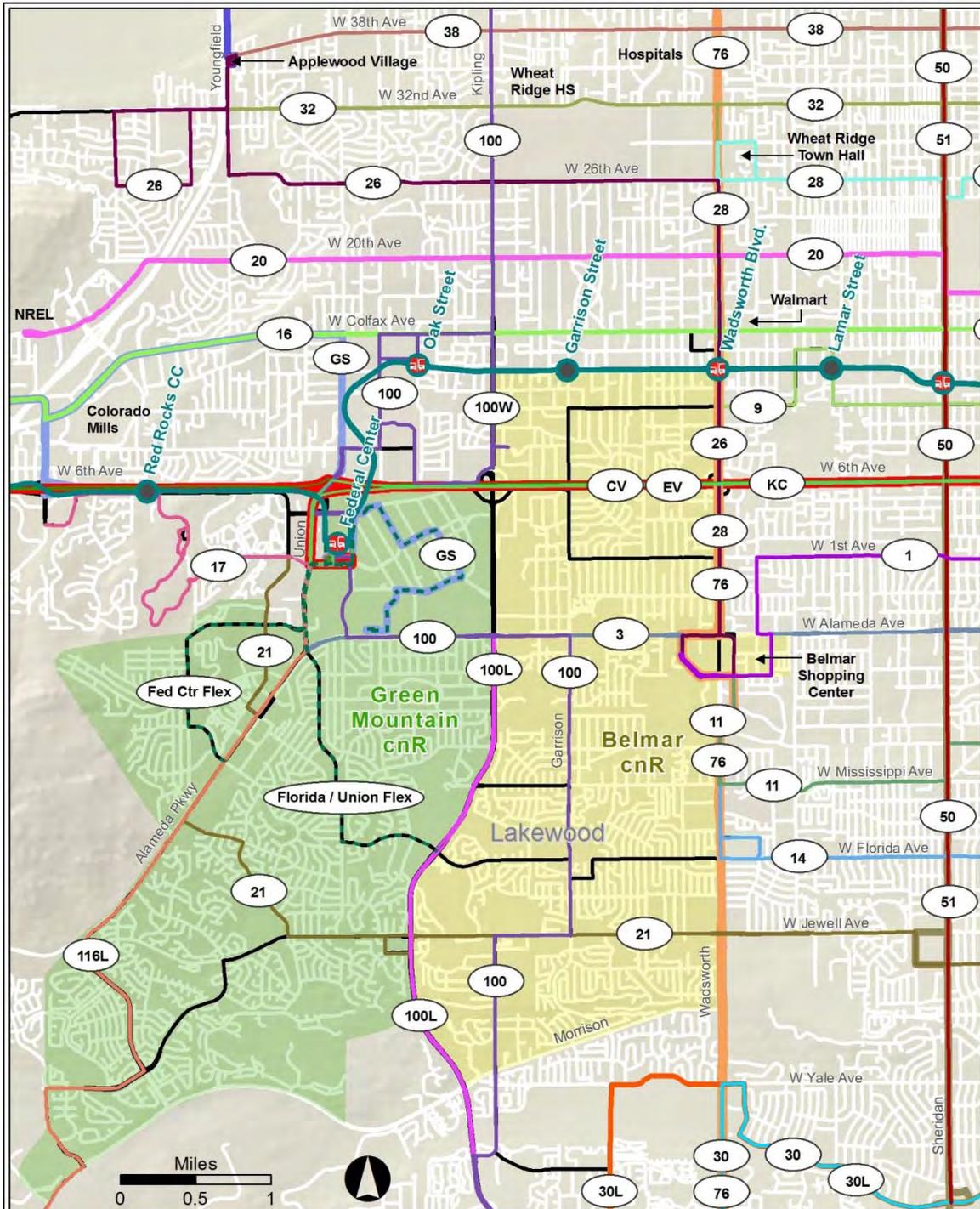
Map 6: Proposed Routes
Federal Blvd to Kipling St



Date: 11/6/12

- W-Line
- Gold Line
- Existing Rail Network
- Discontinued Routes
- park-n-Rides

Map 6 - Proposed Routes Federal Blvd to Kipling St



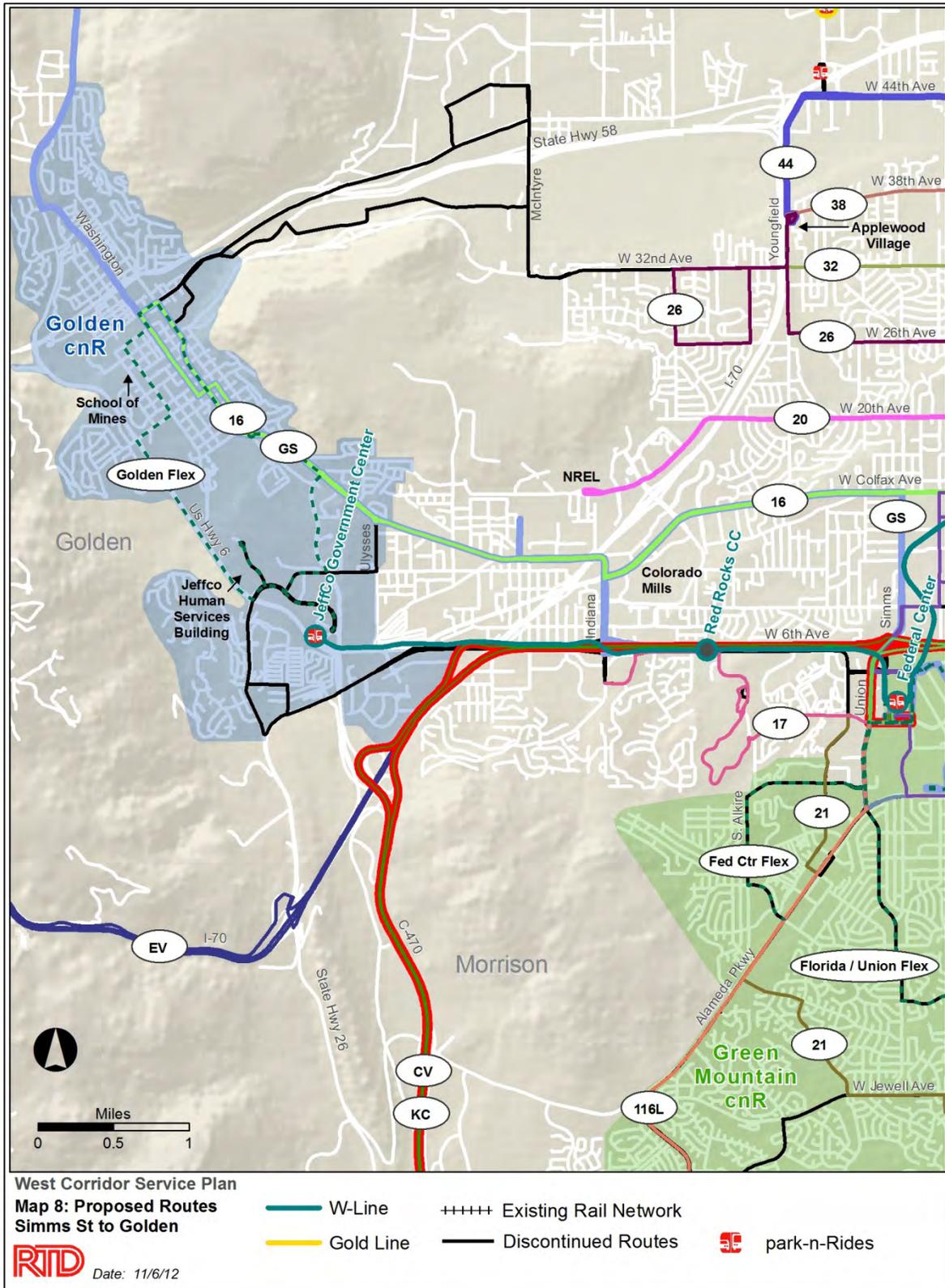
West Corridor Service Plan
 Map 7: Proposed Routes
 Wadsworth Blvd to Simms St



Date: 11/6/12

- W-Line
- Gold Line
- Discontinued Routes
- Existing Rail Network
- P park-n-Rides

Map 7- Proposed Routes Wadsworth to Simms St



Map 8 - Proposed Routes Simms St to Golden



Service Type		Recommendations and Strategies
North-South		<ul style="list-style-type: none"> - Reinvest available resources in service improvements on the strongest core grid routes - Preserve high frequencies to promote spontaneous use - Provide high capacity connections to LRT - Introduce new Limited service to facilitate LRT-based travel <i>See Routes 30/31, 51, 76, 100Ltd, 116Ltd</i>
East-West	Downtown to Wadsworth Blvd	<ul style="list-style-type: none"> - Preserve frequencies to promote spontaneous use - Maintain the core grid network to preserve strong network connectivity - Focus line haul travel on LRT
	West of Wadsworth Blvd	<ul style="list-style-type: none"> - Rationalize low-performing route segments - Introduce alternative service delivery options in limited demand markets <i>See Routes 20, 28, 32 - See Flex-Route 26</i>
Express		<ul style="list-style-type: none"> - Replace routes duplicative of LRT - Restructure into first mile/last mile LRT feeder services - Focus line haul travel on LRT <i>See Routes 2X, 5X, 87X, 93X, 100X, 116X</i>
Regional		<ul style="list-style-type: none"> - Leave as is to avoid transfers for very long distance trips from areas with seasonal issues. <i>See Routes KC, GS, EV, CV</i>
call-n-Ride		<ul style="list-style-type: none"> - Introduce in low demand markets - Allow for flexible demand-based trip making, with checkpoint scheduling at major stops - Fulfill role for first mile/last mile LRT feeder with scheduled LRT station timepoints <i>See Golden cnR, Belmar cnR, Green Mountain cnR</i>

Table 8 - Service Design Strategies

Table 9 - Proposed West Corridor Bus Service Levels summarizes the proposed headways and service spans for West Corridor bus routes.



Final West Corridor Service Plan 2013

Proposed West Corridor Bus Service Levels								
Route	Description	Weekday			Saturday		Sunday	
		Frequency		Span of Service	Frequency	Span of Service	Frequency	Span of Service
		Peak	Off-Peak					
1	West 1st Avenue	30	30	5:00 - 23:00	60	5:00 - 23:00	60	7:00 - 21:00
3	Alameda Crosstown	15	30	4:00 - 25:00	30	5:00 - 25:00	30	5:00 - 25:00
9	West 10th Avenue	30	30	5:00 - 21:00	60	7:00 - 19:00	60	8:00 - 18:00
11	Mississippi Avenue	30	30	5:00 - 23:00	30	5:00 - 23:00	60	6:00 - 19:00
14	West Florida	30	30	5:00 - 19:00	30	6:00 - 19:00	60	9:00 - 19:00
16	West Colfax to Oak Stn	15	15	4:00 - 26:00	15	3:00 - 27:00	15	3:00 - 27:00
	West Colfax to Golden	30	30	4:00 - 26:00	30	3:00 - 27:00	30	3:00 - 27:00
17	Red Rocks CC	30	30	6:00 - 20:00	<<< alternate trips extend from RRCC to 4th/Gladiola			
20	20th Avenue - e of Federal	15	30	5:00 - 24:00	30	5:00 - 24:00	30	5:00 - 24:00
	20th Avenue - to NREL	30	30	5:00 - 19:00				
21	Evans Crosstown - e side	15	30	4:00 - 25:00	30	5:00 - 25:00	60	5:00 - 22:00
	Evans Crosstown - w to Kipling	15	30	5:00 - 25:00	30	6:00 - 25:00	60	6:00 - 22:00
	Evans Crosstown - to FCS	15	30	5:00 - 20:00				
26	West 26th Avenue	30	60	5:00 - 20:00	60	7:00 - 20:00	60	7:00 - 20:00
28	28th Avenue - to Sheridan Blvd	15	30	5:00 - 23:00	60	7:00 - 23:00	60	7:00 - 23:00
	28th Avenue - to Wadsworth	15	30	5:00 - 20:00	60	7:00 - 20:00	60	7:00 - 20:00
	28th Avenue - to L-W Station	30	30	5:00 - 20:00	60	7:00 - 20:00	60	7:00 - 20:00
29	Riverbend	30	60	5:00 - 25:00	60	6:00 - 25:00	60	6:00 - 25:00
30	South Federal - n of Evans	15	15	5:00 - 20:00	15	9:00 - 18:00		
	South Federal - s of Evans	30 rev	60	5:00 - 20:00	60	9:00 - 18:00		
30Ltd	South Federal Limited	30	-	Peak Only				
31	Federal Crosstown	15	15	4:00 - 25:00	15	4:00 - 25:00	15	4:00 - 25:00
32	West 32nd Avenue/City Park	15-30	30	5:00 - 20:00	60	7:00 - 20:00	60	7:00 - 20:00
36	Fort Logan	See Ltd	60	5:00 - 25:00	60	6:00 - 25:00	60	6:00 - 25:00
36Ltd	Littleton via Ft. Logan Limited	30	-	Peak Only				
38	38th Avenue	15-30	30	4:00 - 26:00	30	4:00 - 26:00	30	4:00 - 26:00
44	44th Avenue	15	30	4:00 - 25:00	30	4:00 - 25:00	60	4:00 - 25:00
50	Lakes Crosstown	30	30	6:00 - 19:00				
51	Sheridan Crosstown	30	30	4:00 - 26:00	30	5:00 - 26:00	30	5:00 - 26:00
76	Wadsworth Crosstown	30	30	4:00 - 24:00	30	5:00 - 23:00	60	5:00 - 20:00
	Segment OTA to Hampden	15	15	4:00 - 26:00	30	5:00 - 26:00	60	5:00 - 20:00
100	Kipling Crosstown	30	30	5:00 - 22:00	60	7:00 - 19:00		
100Ltd	South Kipling Limited	30	-	Peak Only including rev				
116Ltd	South Simms Limited	30	-	Peak Only				
AF	DBC/MSS/DUS/40th/DIA	30-60	60	3:00 - 26:00	30-60	3:00 - 26:00	60	3:00 - 26:00
CV/CS/C	Pine Junction/Conifer/Denver	30-60	-	3 AM trips / 3 PM trips	<<< only trips calling at FCS shown			
EV/ES/EX	Evergreen/Aspen Park/Denver	30-60	-	3 AM trips / 5 PM trips	<<< only trips calling at FCS shown			
GS	FederalCenter/Golden/Boulder	30-60	-	6 AM trips / 6 PM trips				
KC	Ken Caryl/FCS/Denver	40	-	3 AM trips / 3 PM trips				
BWCR	Belmar call-n-Ride	30	DR	5:30 - 20:00				
GDCR	Golden call-n-Ride	30	DR	5:30 - 20:00	60	6:00 - 23:00	60	7:00 - 20:00
GMCR	Green Mountain call-n-Ride	30	DR	5:30 - 20:00				

Proposed West Rail Line Service Levels								
Route	Description	Weekday			Saturday		Sunday	
		Frequency		Span of Service	Frequency	Span of Service	Frequency	Span of Service
		Peak	Off-Peak					
W-Line	DUS - Federal Center Station	7½	15	4:00 - 26:00	15	1:00 - 26:00	15	1:00 - 26:00
	West of Federal Center Station	15	15	4:00 - 26:00	15	1:00 - 26:00	15	1:00 - 26:00

Note: Weekday peak periods are approximately 6AM - 9AM and 3PM - 6PM. Table does not include frequencies for evening and early mornings.
 Selected abbreviations: DR = Demand Responsive. Rev = Reverse peak direction. FCS = Federal Center Station OTA = Olde Town Arvada DBC = Denver Bus Center MSS = Market Street Station DUS = Denver Union Station 40th = Airport & 40th pNR DIA = Denver International Airport

Table 9 - Proposed West Corridor Bus Service Levels



5.2.1 North-South Routes Recommendations

With LRT serving as the structural spine in the West Corridor, connecting north-south routes will provide the underlying support network for the collection and distribution of LRT riders throughout West Corridor communities. The performance of LRT will be directly related to the effectiveness of these intersecting bus routes; as such, the plan utilizes the following service design strategies to ensure strong north-south connections:

- Improve service headways to foster spontaneous-use travel and improve frequent grid transfer connections to LRT service.
- Introduce additional Limited stop service on major corridors to offer more competitive travel times and facilitate rapid commute-based LRT travel.
- Improve midday service levels to provide additional spontaneous use of transit options for all-day trip purposes.
- Transition any east-west route segments to new LRT trips where appropriate.
- Design improvements to smoothly fit with future Gold Line connections.

Rte 50 Lakes Crosstown - Would connect with the West Line at Sheridan Station. Service would operate between Bear Valley and Old Town Arvada, via Sheridan Boulevard, West 44th Avenue, Lakeside, Harlan Street, West 48th Avenue, Marshall Street, West 52nd Avenue, Vance Street, Wadsworth Boulevard, and into Olde Town Arvada Park-n-Ride for transfer connections. It would operate weekdays every 30 minutes between 6 a.m. and 7 p.m., coordinated with **Rte 51** schedules to equal a 15-minute frequency on the common portions through Denver, Lakewood, Edgewater, Mountain View and Lakeside.

Rte 51 Sheridan Crosstown – Maintain existing 30 minute service along current alignment with improved 15 minute short line service between 48th Avenue and Dartmouth Avenue as described in **Rte 50**. Rte 51 currently displays strong productivity of nearly 40 passenger boardings per revenue hour and warrants additional investment for service improvements. Following the introduction of LRT service, the short line segment is expected to generate significant additional demand on Sheridan Boulevard. Service hours are proposed to be extended till 12:30 a.m. on the central portion of the route.

Rte 76 Wadsworth Crosstown – Maintain existing local service and introduce a new service overlay operating between Olde Town Arvada and Wadsworth & Hampden park-n-Ride. The new Rte 76 pattern is proposed to operate every 30 minutes during peak periods, effectively providing a combined 15 minute peak frequency along Wadsworth Boulevard. This routing and the operation of peak direction **Rte 30Ltd** trips via Estes Street and Yale Avenue would replace **Rte 87X**.

The local route currently displays strong productivity (nearly 40 passenger boardings per hour) and warrants increased levels of service, particularly with the expectation of additional demand from LRT at Wadsworth Station and further along in the FasTracks



program, the Gold Line. Initially, this is to be provided by extensions of **Rte 14** to Lakewood Commons via Belmar and Wadsworth and **Rte 28** from West 26th & Wadsworth to Lakewood-Wadsworth Station. Service hours are proposed to be extended till 12:30 a.m. on weeknights and Saturday nights on the central portion of the local route.

Rte 100 Kipling Crosstown – Would connect with the West Line at Federal Center Station and at Oak Station. It would travel the existing alignment north of Colfax Avenue and south of Mississippi Avenue. The central portion of the route would be realigned to continue from Mississippi Avenue via Garrison Street to Alameda Avenue, Routt Street, looping through the Federal Center Station, West 4th Avenue, Union Boulevard, West 8th Avenue, looping through Oak Station, and back to the current route on Kipling. Other changes proposed are to run the same route on Saturdays via the Ridge Road campus as on weekdays, providing 30-minute frequencies through the day on weekdays, and providing hourly service on weeknight evenings during typical shopping hours with the last trip in each direction departing Federal Center Station after 10 p.m.

A school tripper, identified as **Rte 100W**, would serve Lakewood High School and commuters southbound from Westminster Center park-n-Ride in the morning to Federal Center Station via Kipling Street, West 6th Avenue Service Road, Parfet Street, West 8th Avenue and then on the regular route. A return trip would be provided over the reverse route after school. The school would also be served by the Belmar call-n-Ride.

Federal Boulevard

Current bus operations on Federal Boulevard consist of two local routes: **Rte 30** South Federal and **Rte 31** North Federal and two Limited routes: **Rte 30Ltd** South Federal Limited and **Rte 36Ltd** Littleton via Ft. Logan Limited operating within the West Corridor study area. Two additional local routes: Rte 29 Riverbend and Rte 36 Fort Logan operate south of the West Corridor study area in the Sheridan/Littleton area. The service plan streamlines operations and will provide direct connections to LRT and Downtown Denver bus service at Decatur/Federal Station.

Rtes 30 and 31 are proposed to be coordinated to form a single Federal Boulevard Crosstown service. The combined routes will operate with a 7½- minute average frequency between Federal/Evans Transfer Center and Federal/Colfax. All trips terminating southbound at Evans would be designated as Rte 31. The Rte 31 will continue north from Colfax with 30-minute service extending to Front Range Community College and Westminster Center park-n-Ride each, for a combined 15-minute frequency. The Rte 30 designation will identify trips terminating in the Colfax & Federal Transfer Center or at the Wadsworth & Hampden park-n-Ride. Rtes 30 and 31 would make the same stops northbound and southbound at Decatur/Federal Station. Rte 30 trips southwest of Federal/Evans would be provided middays, Saturdays, and in the reverse peak direction on weekdays.



Limited Rtes 30Ltd and 36Ltd will maintain current operations, providing peak commuters with a one-seat ride into downtown Denver from South Federal Boulevard, Bear Valley, and South Lowell Boulevard. These routes will provide a distributor alternative for West Rail Line customers oriented toward the center of Downtown Denver at times of high demand. Peak period service on South Federal Boulevard will operate at combined average 5 minute headways. Overall Federal Boulevard resource impacts from the proposed changes are summarized in Table 10 - Federal Boulevard Service Resource Requirements Comparison, which shows service levels when schools are in session. Tables 12 and 13 show service levels when schools are not in session, which will be the case for opening of the West Line. Rte 30Ltd is to be relocated in Downtown from Stout Street to Welton Street, following the same alignment as Rte 36Ltd.

Federal Boulevard Services						
Route	Current			Proposed		
	Weekday		Annual Service Hours	Weekday		Annual Service Hours
	Peak Vehicles	Service Hours		Peak Vehicles	Service Hours	
29	2	20	5,980	2	20	5,980
30	9	94	26,414	7	74	20,638
31	13	157	51,271	13	157	51,271
36	0	14	5,000	0	14	5,000
30Ltd	4	13	3,315	4	13	3,315
36Ltd	5	25	6,375	5	25	6,375
Total	33	323	98,355	31	303	92,579

Table 10 - Federal Boulevard Service Resource Requirements Comparison

5.2.2 East-West Routes Recommendations

Once completed, the West Corridor LRT will attract the majority of east-west line haul travel into downtown Denver, deemphasizing the need for high capacity east-west bus routes in the West Corridor. As line haul travel transitions to LRT service, east-west bus routes in the West Corridor will function primarily for local trip needs and network completion.

Bus service on Colfax Avenue will consist of the existing **Rte 16 West Colfax Avenue** operating every 15 minutes to Oak Station, with every other trip serving Golden throughout the day. Connections to LRT will be available for all trips at Oak Station. Additional Rte 16 trips will be provided between Decatur/Federal Station as needed to maintain connections between the Denver Civic Center and West Rail Line points.

Rte 16Ltd West Colfax Limited is proposed for discontinuation due to duplication with the future LRT line, as LRT is expected to attract a large amount of the existing Rte 16Ltd line-haul travel into downtown. Midday weekday and weekend service into Golden previously provided by Rte 16Ltd will be provided by Rte 16 every 30 minutes.



A key guiding principle for the service plan includes replacing unproductive east-west route segments with more cost-effective service delivery options. Generally, the performance of east-west routes drops significantly west of Wadsworth Boulevard, marking a clear transition from the robust core grid network to limited demand markets. In these instances, the service plan recommends truncating routes at Wadsworth Boulevard (similar to current weekend operations) and introducing call-n-Ride services to replace discontinued unproductive route segments. Some trips would be diverted to Lakewood Commons and Belmar. Routes affected by this strategy include:

- **Rte 9 West 10th Avenue** segments west of Wadsworth Boulevard; replaced by Belmar call-n-Ride. Midday service would be improved to every 30 minutes, permitting interlining with **Rte 28** and better connections with **W-Line** light rail service at Lamar Station and Lakewood-Wadsworth Station.
- **Rte 14 West Florida** segments; replaced by Green Mountain and Belmar call-n-Rides. Weekday service extended to Lakewood Commons via Belmar.
- **Rte 17 Jeffco** segments; replaced by Golden call-n-Ride and Belmar call-n-Ride.
- **Rte 21 Evans Crosstown** (west of Union Boulevard) segments; replaced by Green Mountain call-n-Ride.
- **Rte 28 28th Ave** segments; replaced by **Rte 26 West 26th Avenue** west of Wadsworth Boulevard. Daytime service on both routes extended along Wadsworth to Lakewood-Wadsworth Station and Lakewood Commons. Rte 26 would include two morning and two afternoon peak trips extended to serve the area west of Youngfield to Eldridge on schedules timed for 7:30 and 8:00 a.m. work starting times and 4:30 and 5:00 p.m. work quitting times.
- **Rte 32 32nd Ave / City Park** no change. Access to the West Line is provided by parallel **Rtes 26 and 28**.

Other east-west route recommendations include:

- **Rte 1 West 1st Avenue** would remain for access into central Downtown Denver, but would no longer go through the Colfax & Federal Transfer Center. Its alignment would be reviewed in 2014 after the relocation of connecting Market Street Station activity to Union Station. Peak school trippers would be removed from the route, because the Light Rail lines provide faster and more frequent service for the student travel patterns.
- All **Rte 3 Alameda Crosstown** trips will be realigned to Federal Center Station via Union Boulevard, discontinuing the low-performing Green Mountain pattern.
- **Rte 4 Morrison Road** which only operated in peak hour periods (7 am trips, 8 pm trips) and on 45 minute frequencies, was discontinued in January 2012 due to poor performance (fewer than 10 passenger boardings per trip) and duplication of existing local services. Westwood riders can utilize **Rtes 3 and 11** for east-west



connections to Southwest Corridor LRT or frequent **Rtes 30/31** and **50/51** for north-south connections to West Corridor LRT.

- **Rte 14 West Florida** weekday daytime trips will terminate at Lakewood Commons, with **Rte 21** replacing segments of local service to Federal Center via portions of the existing Rte 14 alignment on Union Boulevard.
- A portion of **Rte 17 Jeffco** will transition to a rail feeder service, connecting Red Rocks Community College, and western Lakewood multi-family housing neighborhoods with Federal Center Station.
- **Rte 20 20th Avenue** short-turn trips that currently operate to and from the east at the Colfax & Federal Transfer Center would be extended to Federal Boulevard, terminating at 16th & Grove, in order to maintain connections.
- The plan recommends that several routes maintain their current operations: **Rte 11 Mississippi Crosstown**, **Rte 38 38th Avenue**, **Rte 44 44th Avenue**.

5.2.3 Other Service Recommendations

Express and Regional Routes

An objective of the service plan is to truncate existing downtown-based services at LRT stations, allowing LRT and “first mile”/“last mile” local bus services to provide long distance trip completion:

- **Rte 2X Morrison/Alkire/Federal Center Express**, **Rte 5X Federal Center Express**, **Rte 87X South Wadsworth Express**, **Rte 93X Green Mountain Express** will not be retained, with proposed local bus and call-n-Ride services providing first mile/last mile LRT access to peak commuters. **Rte 116Ltd** would cover major stops of Rte 2X. Portions of these routes’ patronage can be expected to switch to park-n-Ride opportunities that are not presently available, or to Regional buses calling at Federal Center Station.
- **Rte 6X Federal Center/I-25 & Broadway Express** will be discontinued due to duplication with more comprehensive LRT service.
- **Rte 100X South Kipling Express** will be realigned to Federal Center Station as **Rte 100Ltd South Kipling Limited**, providing first mile access to LRT from Ken Caryl park-n-Ride and points on Kipling Street/Kipling Parkway.
- **Rte 116X South Simms Express** will be realigned to Federal Center Station as **Route 116Ltd South Simms Limited**, providing first mile access to LRT from Ken Caryl park-n-Ride and points on Simms Street/Kipling Parkway. From C-470 to the Federal Center Station, Rte 116Ltd would cover major stops of current **Rte 2X**.
- A new **Rte KC** Regional service will be provided between Ken Caryl stops, the Ken Caryl Park-n-Ride and Civic Center Station, calling at the Federal Center Station. Regional fares will apply for through travel from Ken Caryl to Civic Center, with Express fares applying to Federal Center Station stops.



- Mountain Regional **Rtes CS** and **ES** would continue to serve Federal Center Station en route to or from Civic Center Station.
- Northern Regional **Rte GS** would continue to serve Federal Center Station, the Federal Center, NREL and other currently covered segments of its route.

skyRide (airport) service

Earlier plans for the West Corridor assumed that **Rte AF** between Federal Center Station, Downtown Denver and Denver International Airport would remain intact until opening of the East/DIA commuter rail line. However, other assumptions, such as the earlier completion of Union Station, closure of Market Street Station and traffic delays on US6 and I-70 were not expected to occur during that time period. The revised plan calls for service to be discontinued west of Downtown Denver, with a minor exception.

The basic route would begin at the Denver Bus Center, serve Market Street Station until it is closed, serve Union Station at 17th & Chestnut Streets for Light Rail connections until the underground bus concourse is opened, serve the underground bus concourse, enter the freeway system via the 20th Street ramps and then continue on its regular route. The westbound route would reverse this pattern. An exception is that a weekday trip would be provided from Jeffco Government Center/Golden Station, Federal Center Station and through Downtown Denver replacing the current first trip. That trip operates during hours when the **W-Line** light rail service will not. On weekends and holidays, train service would be available from those points to Rte AF connections at Union Station.

call-n-Rides

Based on successes from previous RTD rail corridor implementations, call-n-Ride services allow for the provision of transit service in limited demand markets utilizing minimal resources. Given their flexible service attributes, call-n-Ride services proposed in the West Corridor fulfill multiple roles, including first mile/last mile trip completion with LRT stations and local circulation in limited demand markets.

The **Golden call-n-Ride** will provide flexible service throughout Golden, including downtown and the Jefferson County Government Center. The service will operate at times as a flex-route, serving scheduled timepoints at downtown Golden, Jeffco Station, and various other key community locations within the service area. In conjunction with RTD, Golden was recently awarded a federal CMAQ grant to fund the Golden call-n-Ride service.

The **Green Mountain call-n-Ride** will operate at times as a flex-route with a scheduled timepoint at Federal Center Station. The service will provide coverage to the area south of the West Corridor rail line, west of Kipling Street, north of Jewell Avenue, east of Bear Creek Boulevard/Alameda Avenue/Alkire Street. The call-n-Ride will cover discontinued



portions of local **Rtes 3** and **21**, while providing first mile/last mile service to Federal Center Station from discontinued portions of Express **Rtes 2X** and **93X**.

The **Belmar call-n-Ride** will provide coverage to the area south of the West Corridor rail line, west of Wadsworth Boulevard, north of Jewell Avenue, east of Kipling Street. The call-n-Ride will provide on-demand service with a scheduled time point at Wadsworth Station. The call-n-Ride will cover discontinued portions of Local **Rtes 9** and **17**, while providing first mile/last mile service to Lakewood/Wadsworth Station from discontinued portions of Express **Rtes 87X** and **93X**.

5.2.4 Discontinued Routes

Discontinued routes or route segments were typically recommended for discontinuation due to low performance or duplication with other services. Resources previously allocated to these discontinued services are reinvested to other West Corridor services as part of this service plan. Almost all discontinued routes and route segments are either replaced by new demand response service or are within walking distance of fixed route RTD service. Discontinued routes are indicated in Table 12 - Proposed Service Resource Requirements.

5.3 Service Resource Impacts

Table 11 - Existing Service Resource Requirements summarizes existing service resource requirements. Tables 12 and 13 summarize the resource impacts of the proposed plan, including in-service hours based on desired service spans and headways and vehicle requirements.

The plan results in overall changes in RTD bus operations as compared with the May 2012 service:

- An increase to 649,442 in-service hours on fixed and demand-responsive routes, representing a 1 percent rise.
- A peak vehicle requirement of 208 buses on fixed and demand-responsive routes, representing a 5 percent reduction (9 buses).

The service plan incorporates several guiding principles, many of which have a significant bearing on the resource requirements for the future West Corridor bus network:

- The decrease in vehicles reflects the elimination of routes duplicative of LRT service (e.g. **Rte 16Ltd** and Express **Rtes 5X** and **6X**) and the objective to truncate existing downtown-based services at LRT stations, allowing LRT and first mile/last mile local bus services to provide long distance trip completion.
- Many of the in-service hours and vehicles reinvested in the system appear in the form of service improvements on the core grid network (e.g. **Rtes 50/51**, **Rte 76**,



and **Rte 100**), ensuring that LRT riders are effectively collected and distributed throughout West Corridor communities.

- The reduction in peak buses is a direct result of the replacement of unproductive east-west route segments with more alternative and more cost-effective service delivery options (i.e. call-n-Rides). Successes from previous RTD rail corridor implementations show that call-and-Ride services allow for the provision of transit service in limited demand markets utilizing minimal resources.



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Existing Services Resource Requirements - January 2012										
Route Number	Route Description	Weekday				Saturday		Sunday		Annual
		Vehicles			In-Service Hours	Vehicles	In-Service Hours	Vehicles	In-Service Hours	In-Service Hours
		AM	Base	PM						
1	West 1st Avenue	9	6	6	90	3	41	3	30	26,822
3	Alameda Avenue	9	6	10	99	5	71	5	66	32,765
9	West 10th Avenue	7	3	6	51	2	20	2	17	15,031
11	Mississippi Avenue	12	8	10	123	7	82	4	36	37,717
14	West Florida	6	2	5	34	2	17	1	7	9,983
16	West Colfax	8	8	9	130	7	102	7	98	44,138
16Ltd	West Colfax Limited	7	7	8	77	5	42	5	38	24,004
17	Jeffco	6	6	6	68					17,340
20	20th Avenue	13	6	11	108	4	49	4	46	32,756
21	Evans Crosstown	12	8	13	123	7	77	3	38	37,573
28	28th Avenue	11	6	9	92	3	37	3	35	27,426
29	Riverbend	2	2	2	20	2	8	2	8	5,895
30	South Federal	9	7	9	94	7	47			26,414
30Ltd	South Federal Limited	4	0	2	13					3,315
31	Federal Crosstown	13	11	13	157	10	109	8	96	51,271
32	West 32nd Avenue/City Park	7	4	10	61	1	12	1	11	16,817
36	Fort Logan	0	0	0	14	1	13	1	13	4,976
36Ltd	Fort Logan Limited	5	0	5	25					6,375
38	38th Avenue	9	6	11	100	6	75	5	65	33,170
44	44th Avenue	16	9	12	148	4	62	4	59	44,284
51	Sheridan Crosstown	8	9	9	112	6	65	5	47	34,653
76	Wadsworth Crosstown	8	8	10	125	7	80	4	38	38,267
100	Kipling Crosstown	7	4	7	57	3	28			15,991
2X	Alkire/FCS Express	1	0	3	7					1,785
5X	FCS Express	3	0	1	5					1,275
6X	FCS/I-25 & Broadway Express	2	0	2	6					1,479
87X	South Wadsworth Express	2	0	2	4					1,020
100X	South Kipling Express	1	0	3	8					1,951
116X	South Simms Express	5	0	6	14					3,570
CV/CS/CX	Pine Junction/Conifer/Denver	6	0	6	23					5,886
EV/ES/EX	Evergreen/Aspen Park/Denver	5	0	7	23					5,891
GS	Golden/Boulder	6	0	4	27					6,885
AF	FCS/Downtown/DIA	7	4	7	75	6	62	6	63	26,003
	Total	226	130	224	2,112	98	1,098	73	811	642,727

Table 11 - Existing Service Resource Requirements



Final West Corridor Service Plan 2013

Proposed Services Resource Requirements														
Route Number	Route Description	Weekday				Saturday			Sunday			Annual		
		Vehicles			Total One-Way Trips	In-Service Hours	Vehicles	Total One-Way Trips	In-Service Hours	Vehicles	Total One-Way Trips	In-Service Hours	Total One-Way Trips	In-Service Hours
		AM	Base	PM										
1	West 1st Avenue	7	6	6	71	88	3	36	40	3	28	30	21,601	26,260
3	Alameda Crosstown	9	6	10	94	99	5	68	71	5	64	66	31,218	32,765
9	West 10th Avenue	4	4	4	62	59	2	23	20	2	20	18	18,166	17,129
11	Mississippi Avenue	10	8	9	71	119	7	54	82	4	27	36	22,479	36,697
14	West Florida	3	3	3	54	28	2	47	17	1	20	7	17,374	8,453
16	West Colfax	10	10	11	168	150	10	164	122	10	164	118	60,880	51,438
16Ltd	West Colfax Limited							Discontinued					0	0
17	Red Rocks CC	1	1	1	56	14							14,280	3,570
20	20th Avenue	13	6	12	94	108	4	64	49	4	63	46	30,952	32,756
21	Evans Crosstown	11	7	12	90	111	7	62	77	3	30	38	27,914	34,513
28	28th Avenue	11	6	9	74	87	2	31	25	3	31	35	22,280	25,515
29	Riverbend	2	1	2	53	20	1	31	8	1	31	8	16,925	5,980
30	South Federal	7	5	7	123	74	5	67	40				34,849	20,950
30Ltd	South Federal Limited	3	0	3	12	11							3,060	2,805
31	Federal Crosstown	11	11	13	138	155	10	111	109	8	118	96	47,806	50,761
32	West 32nd Avenue/City Park	7	4	10	66	61	1	26	12	1	26	11	19,690	16,817
36	Fort Logan	0	1	0	29	14	1	31	13	1	31	13	10,805	5,000
36Ltd	Fort Logan Limited	5	0	5	25	25							6,375	6,375
38	38th Avenue	9	6	11	84	100	6	71	75	5	70	65	29,172	33,170
44	44th Avenue	16	9	13	85	152	4	40	62	4	37	59	25,901	45,406
50	Lakes Crosstown	4	4	4	56	60							14,280	15,300
51	Sheridan Crosstown	8	9	9	70	117	6	67	79	5	49	47	24,176	36,669
76	Wadworth Crosstown	8	8	10	84	125	7	74	94	4	42	52	27,704	39,779
	Wadworth: Hampden-Olde Town	4	0	4	28	28							7,140	7,140
100	Kipling Crosstown	7	6	7	60	79	4	22	28				16,444	21,491
2X	Alkire/Federal Center Express							Discontinued					0	0
5X	Federal Center Express							Discontinued					0	0
6X	FederalCenter/I-25 & Bdwy Express							Discontinued					0	0
87X	South Wadworth Express							Discontinued					0	0
100Ltd	South Kipling Limited	2	0	2	10	9							2,550	2,295
100X	South Kipling Express							Discontinued					0	0
116Ltd	South Simms Limited	2	0	3	12	11							3,060	2,805
116X	South Simms Express							Discontinued					0	0
AF	DBC/MSS/DUS/40th/DIA	4	3	4	54	57	4	44	44	4	44	44	18,610	19,375
CV/CS/CX	Pine Junction/Conifer/Denver	6	0	6	20	24	<<< CS calls at Federal Center Station						5,100	6,120
EV/ES/EX	Evergreen/Aspen Park/Denver	5	0	7	19	23	<<< ES calls at Federal Center Station						4,845	5,891
GS	Golden/Boulder	6	0	4	22	27	<<< GS calls at Federal Center Station						5,610	6,885
KC	Ken Caryl/FCS/Denver	2	0	2	6	6	<<< KC calls at Federal Center Station						1,530	1,530
26	West 26th Ave	3	1	3	42	21	1	26	13	1	26	13	13,570	6,785
BWCR	Belmar call-n-Ride	2	1	2		21							0	5,355
GDCR	Golden call-n-Ride	2	1	2		21	1		17	1		13	0	6,993
GMCR	Green Mountain call-n-Ride	4	1	4		34							0	8,670
	Total	208	128	214	1,932	2,138	93	1,159	1,097	70	921	815	606,346	649,442

Table 12 - Proposed Service Resource Requirements



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2013 AM Peak Vehicle Requirements							
Route Number	Route Description	Body-On-Chassis	30'	40'	60'	Highway	All Types
	May 2012 Runboard	0	0	177	11	29	
	Total All Types						217
1	West 1st Avenue			7			7
3	Alameda Avenue			9			9
9	West 10th Avenue			4			4
11	Mississippi Crosstown			10			10
14	West Florida			3			3
16	West Colfax			10			10
17	Red Rocks CC			1			1
20	20th Avenue			13			13
21	Evans Crosstown			11			11
28	28th Avenue			11			11
29	Riverbend			2			2
30	South Federal			7			7
30Ltd	South Federal Limited			2	1		3
31	Federal Crosstown			11			11
32	West 32nd Avenue/City Park			7			7
36	Fort Logan			0			0
36Ltd	Littleton via Fort Logan Limited			3	2		5
38	38th Avenue			9			9
44	44th Avenue			16			16
50	Lakes Crosstown			4			4
51	Sheridan Crosstown			8			8
76	Wadsworth Crosstown			8			8
	Wadsworth: Hampden-Olde Town			4			4
100	Kipling Crosstown			7			7
100 Ltd	South Kipling Limited			0	2		2
116 Ltd	South Sims Limited			0	2		2
AF	DBC/MSS/DUS/40th/DIA					4	4
CV/CS	Pine Junction/Conifer/Denver					6	6
EV/ES	Evergreen/Aspen Park/Denver					5	5
GS	Federal Center/Golden/Boulder					6	6
KC	Ken Caryl/FCS/Denver					2	2
26	West 26th Ave			3			3
BWCR	Belmar call-n-Ride	2					2
GDCR	Golden call-n-Ride	2					2
GMCR	Green Mountain call-n-Ride	4					4
	Proposed Services Vehicle Requirements	8	0	170	7	23	
	Total All Types						208
	Net Incremental Vehicle Requirements	8	0	-7	-4	-6	
	Net All Types (NIC Spares)						-9

Table 13 - 2013 AM Peak Vehicle Requirements



6 Ridership Estimation

6.1 Background

In the Preliminary Proposed West Corridor Service Plan prepared in 2011, consultants Transportation Management & Design, Inc. developed a West Corridor network conforming to the principles laid out in Section 5.1 of this report. Their report is the basis of this proposal, with modifications made as a result of issues developed in the modeling process. Additional changes were made for bus operational reasons and in response to suggestions from local agencies, but these were not major revisions of the plan. In January 2012, annual in-service hours in the West Corridor were reduced by one percent, but as the reductions concentrated on lightly-used services, these did not cause major revisions in the plan.

6.2 Procedures and model results

For the purposes of this plan, ridership estimates were based on a modified version of the 2020 FasTracks Model. The proposed West Corridor bus and rail network was used as the underlying transit network in the FasTracks model with the intention of projecting expected ridership within the existing market parameters from the FasTracks model. Results for modified model runs were within 3 percent of the original FasTracks model run. At the route level, results were more varied due to the inherent characteristics associated with disaggregating the model data itself and to changes in West Corridor bus services recommended by this plan. [Table 14 - Ridership & Productivity Comparison](#) displays the current and projected boardings and productivity for West Corridor routes. Model results from the West Corridor Plan Model indicate that while bus productivity decreases from current levels, overall productivity (including LRT) is expected to increase approximately 10 percent by 2020.

Generally, route level results are consistent with prior model runs. Differences in results are relatively minor and largely reflected in small ridership allocations between bus and LRT. The model results capture expected route level ridership reasonably well, with few exceptions:

Federal Boulevard Routes. Recommended changes to service on Federal Boulevard resulted in a decrease in Local ridership attributed to the discontinuation of **Rte 29** and the Bear Valley portion of **Rte 30**, the replacement of **Rte 36** with **Rte 31**, and the reduction in service frequency along Federal Boulevard. These changes were removed from the Proposed Plan due to operating complications.

Limited service boardings, however, are significantly lower than expected based on the recommended West Corridor service plan. Currently, **Rtes 30Ltd** and **36Ltd** generate 580 and 950 daily boardings, respectively. These results are significantly



higher than the results projected by the model but remain within the passenger capacity limits of the current service. Considering these routes are recommended to remain largely unchanged, ridership is expected to increase from current levels along with overall bus ridership in the area.

Consequently, on **Rtes 30 and 31** service levels are adjusted to properly adapt to changes in transfer patterns due to the bus-LRT transfer at the Federal-Decatur Station and can be adjusted if ridership in the corridor increases more than projected.

Colfax Avenue Routes. Ridership patterns on Colfax Avenue routes are expected to change significantly with the implementation of LRT and the planned discontinuation of **Rte 16Ltd**. Current Rte 16Ltd riders are expected to shift to **Rte 16** and LRT; however, the share of riders choosing one mode over the other is difficult to predict prior to the service change. Additionally, some existing Rte 16 ridership will likely convert to LRT to fulfill certain trip purposes. Some customers will use both Rte 16 and the West Rail Line for specific needs.

North-South Routes. Generally, north-south routes with future connections to LRT are expected to experience ridership gains following the implementation of LRT. The model results support this assumption with moderate projected ridership gains on **Rtes 50/51 and 76**. **Rte 100**, however, is projected to more than double daily boardings in the model results, despite experiencing a relatively minimal improvement to 30 minute all-day frequency. While ridership is expected to increase, the gains are likely to be more modest unless higher frequencies are implemented. The higher ridership forecast was accommodated in the revised plan by insertion of **Rte 100Ltd**.

call-n-Rides. Modeling call-n-Ride ridership presented a unique challenge, considering the FasTracks model is not designed to project non-fixed-route ridership. For the purposes of this study, "proxy" call-n-Ride routes were created in the model, acting as fixed-route substitutes covering the basic call-n-Ride service area.

The results for the Golden and Belmar call-n-Rides appear reasonable, as they are within the general range of current RTD call-n-Ride ridership. Ridership for the Golden call-n-Ride may in fact be closer to the 350 daily boardings as predicted in the Golden Transit Feasibility Study. Conversely, the results for the Green Mountain and the then-proposed Applewood call-n-Ride ridership projections appear high, considering the most productive current RTD call-n-Ride generates just 200 daily boardings. Ridership on these call-n-Rides is more likely to be in the range of 200 to 400 daily boardings based on the underlying market demand. The Green Mountain call-n-Ride may eventually have potential to provide fixed-route first



mile/last mile service depending on growth in demand from LRT. Revisions to the plan were made for the Applewood area, replacing a proposed call-n-Ride with continued conventional service on **Rtes 20** and **32**, bracketing Flex-Ride service to be introduced with **Rte 26**.

In summary, the proposed network changes were successfully incorporated and tested using the existing FasTracks model with the recommended West Corridor service changes. Projected ridership resulting from the changes recommended in the West Corridor plan is generally consistent with earlier model runs, with the West Corridor Plan model run displaying results within 1 percent of the FasTracks model run. Similarly, results for West Corridor routes from the West Corridor Plan Model produced results within just 3 percent of the original FasTracks model run. Both of these results are within acceptable margins of error for model run comparisons.



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Weekday Boardings & Productivity Comparison								
Route	2010			Modified 2020 Model Run				
	Total Boardings	Hours	Boardings per Hour	Peak Boardings	Off-Peak Boardings	Total Boardings	Hours	Boardings per Hour
1	2470	84	29.4	186	875	1060	49	21.6
3	4532	112	40.3	3940	2998	6938	112	62.0
4	148	4	35.5					
9	1614	47	34.0	157	10	167	37	4.6
11	4299	116	37.1	811	2033	2843	116	24.5
14	1214	33	36.8	405	526	931	23	41.4
16	6624	122	54.4	1852	4265	6117	165	37.2
16L	3910	76	51.7					
17	1643	63	26.0	141	294	435	21	20.4
20	4221	112	37.6	1974	787	2761	108	25.5
21	5870	138	42.5	2322	3450	5771	129	44.7
28	2594	96	27.1	1590	1428	3018	95	31.7
29	911	20	45.6					
30	5856	85	68.7	3581	5029	8610		
30L	584	12	47.3	261		261	13	20.5
31	948	144	6.6			8610	221	38.9
32	1985	71	27.8	860	1091	1951	80	24.4
36	445	14	31.8					
36L	948	24	39.3	241		241	25	9.7
38	4066	99	40.9	735	796	1531	99	15.5
44	4209	148	28.5	2501	1641	4141	148	28.0
44L	152	6	27.5	82		82	6	14.8
49				87	19	107	32	3.4
51	4063	104	39.0	2371	3175	5546	144	38.6
76	5275	136	38.8	2484	4212	6696	136	49.2
76L				638		638	30	21.4
100	1395	55	25.4	1425	1938	3364	79	42.8
2X	167	6	25.9					
5X	212	4	47.5					
6X	110	6	19.0					
87X	93	3	32.3					
93X	90	5	18.3					
100X	187	8	24.4					
116X/116Ltd	219	11	20.7	123		123	8	14.5
CS				73		73		
CV	499	23	21.6	62		62	23	2.6
ES				96		96		
EV	435	23	18.8	50		50	24	2.1
GS	569	25	22.4	330		330	26	12.8
AF	1871	66	28.5					
Applewood cnR				166	159	325	21	15.5
Golden cnR				161	83	244	21	11.6
Green Mtn cnR				243	159	402	34	11.8
Wadsworth cnR				120	13	133	21	6.3
Bus Total	74,428	2,103	35.4	30,066	34,979	73,656	2,044	32.4
W-Line LRT	-	-	-	14,290	10,189	24,478	305	80.3
Grand Total	74,428	2,103	35.4	44,356	45,168	98,134	2,349	41.8

Table 14 - Ridership & Productivity Comparison



7 Process & Other Issues

7.1 Process

RTD developed the service plan in concert with municipal and other transportation organizations and public input on the following schedule:

- September 2011 – Issue Preliminary Proposed West Corridor Service Plan 2013. [Completed.]
- September – December 2011 – Review and comment on *preliminary* proposed plan. [Completed.]
- February 2012 – Issue Proposed Service plan based on review and comments. [Completed.]
- April 2012 – Hold public hearings on the *proposed* service plan. [Completed.]
- October 2012 – RTD Board approved the service plan. [Completed.]
- November 2012 – Adoption of RTD budget incorporating service plan.
- February/March 2013 – Review and approve minor refinements to service plan.
- April 2013 – Implement service plan.

This schedule provided time for substantial review and comment on this plan. RTD placed the proposal and related documents on its website for the widest possible availability for review and comment. In addition RTD staff members were and will be available to make presentations to groups as a forum for detailed discussions. To request a presentation please contact Robert Rynerson at Robert.Rynerson@rtd-denver.com or 303-299-2480. E-mail questions and comments should be sent to service.changes@rtd-denver.com with “West Corridor Plan Comment” on the subject line.

7.2 Other Issues

7.2.1 ADA Coverage

Providers of regular route transit service are required to offer alternative service within a $\frac{3}{4}$ - mile radius of the regular service points for eligible customers with disabilities. A variety of details are beyond the province of this report. However, a check of RTD access-a-Ride records indicates that at present 53 customers of that service would no longer be covered due to the proposed changes in regular routes. Proposed call-n-Ride services are able to serve 90% of their locations. RTD’s access-a-Ride staff would work with the remaining individuals to determine whether and how they would be covered.



7.2.2 Issues raised in the public input process

Eight public meetings were held during the second half of April in order to obtain comments on the proposed service plan for the West Corridor, including the West Rail Line (**W-Line**) and bus and call-n-Ride services. 201 public participants offered their views or attended to ask questions. Information from the hearings and additional field work was then taken into account where resources permit and the plan was modified.

Additional meetings have been and will be held with local government officials and civic or neighborhood groups as requested, with any other changes limited by resources and the calendar in preparation for the service changes to take effect upon completion of construction, testing and training on the West Rail Line.

7.2.3 West Corridor service changes public hearing summaries

Jeffco Government Center - Monday, April 16, 2012

The goal of retaining a one-seat ride on **Rtes 100X** and **116X** drew the most interest from the 26 members of the public attending the Golden meeting. Participants felt that the proposed alternatives were too slow and worried that adding a Regional **Rte KC** from the Ken Caryl area would divide ridership up, rather than attracting customers. Two speakers, including Tim Young (Jefferson County Human Services Manager for Child Services), expressed concern about the proposed Golden call-n-Ride's ability to handle the family traffic on the mile stretch between their buildings and the light rail terminal. (Service is presently provided by **Rte 17**.)

Individuals expressed support for retaining a one-seat ride on Local **Rte 9** from the area of the Garrison Station to the Market Street Station vicinity, criticized the alignment of the Light Rail line at Union Station, supported the alignment of the Light Rail line at Union Station and asked neutral questions about changes proposed for **Rte AF**. Six RTD staff members attended the meeting and answered numerous questions afterward.

Clements Community Center – Lakewood - Wednesday, April 18, 2012

The 52 members of the public who attended the Lakewood meeting represented diverse interests. Common concerns were the proposed loss of direct bus service into Downtown on **Rtes 20, 28, 32** in the area to be covered by the Applewood call-n-Ride and expected inadequacies in the call-n-Ride services for that area and replacing **Rte 17** for the Jefferson County Human Services complex. Division Director Lynnae Flora of the Jefferson County Department of Human Services stated that the call-n-Ride will be inadequate to access their campus. Two customers also spoke in favor of retaining **Rte 100X** as a one-seat ride to Civic Center Station.

Individuals covered a number of issues: Discontinuance of **Rte 9** between Wadsworth and Federal was opposed due to the poor sidewalks leading to light rail stations, with a circulator route for those neighborhoods proposed as an alternative; objections to the slow



speed of the 16th Street Mall Ride; concern about possible travel times on the proposed **Rte AF**. Non-service issues raised included a suggestion that an intense safety program be adopted along the line. One speaker objected to call-n-Ride vans operating in the vicinity of Garrison Station as a betrayal of RTD's commitment not to operate bus service on Garrison Street. RTD Director Matt Cohen heard the testimony, along with six RTD staff members.

Written testimony prepared for this meeting and submitted in lieu of making statements included support for the idea of extending **Rte 76Ltd** from West Colfax to Olde Town Arvada; a proposal to replace Rte 17 in the Jeffco Government Center with a fixed route, rather than a call-n-Ride; adding a deviation to **Rte 49** to serve Regis University's campus.

Bear Creek Elementary School; Bear Valley - Thursday, April 19, 2012

Retaining through service to Civic Center Station on **Rtes 100X** and **116X** was the top concern among the 32 members of the public who attended the Bear Valley meeting. Similar concerns were raised on behalf of **Rte 2X** service in the Green Mountain area. The route alternatives in the service proposal were opposed, but suggestions were made by customers for other alternatives. The majority favored – if the Express routes were not retained as they are – adding a stop on the proposed Regional **Rte KC** at the unofficial park-n-Ride at C-470/Quincy. The proposed discontinuance of **Rte 21** in the area to be served by the Green Mountain call-n-Ride was also a concern of many, especially in regard to service for Green Mountain High School.

Individual concerns were voiced, including the needs of Wheat Ridge High School students on **Rte 32** in the segment proposed to be replaced by a call-n-Ride; concern was also expressed by a satisfied user of the Dry Creek call-n-Ride who did not feel that call-n-Ride service areas as large as proposed in the West Corridor plan were workable. Five staff participated in the meeting.

Hadley Branch – Denver Public Library - Saturday, April 21, 2012

Diverse comments were offered by the eight members of the public who attended the meeting. One person was critical of the Union Station alignment, *versus* going into the central Downtown loop. Another had questions about where the new line would go in Downtown. Others opposed removing **Rte 14** west of Wadsworth, but asked that it be scheduled for favorable connections with **Rte 76**; supported restoring **Rte 100** service on Sundays; opposed discontinuing **Rte 17** service on West 44th Avenue at the Colorado Railroad Museum; expressed concern about replacing Rte 17 at the Human Services building with the Golden call-n-Ride; supported 7-day a week operation of the Golden call-n-Ride. Three RTD staff members and one City and County of Denver planner heard the testimony and answered questions.



Blair-Caldwell Library – Five Points - Saturday, April 21, 2012

The most commonly expressed concern among the 14 members of the public at this meeting regarded the call-n-Ride service proposed to replace **Rte 17** for Jeffco Human Services buildings and in Applewood replacing segments of **Rtes 20, 28, and 32**. In brief, the concern regarding the former is that the special needs of Human Services clients could not be met and for the latter that capacity would be insufficient. A written proposal was presented describing a merger of segments of Rtes 20 and 28 to continue serving NREL. Two speakers also objected to the lack of rail service between Five Points and the West Line/Union Station and favored a shuttle route of some type.

Individual statements were made in support of retaining **Rte 9** east to Sheridan Boulevard instead of introducing the new **Rte 49**; in support of the **Rte 16** service change proposal if the first weekday morning trip remains in the current time frame; in favor of signaling changes on Welton Street to cure schedule adherence problems; in favor of moving the proposed B-C fare zone boundary west one station in order to lower fares at Oak Station; opposed removing **Rte 3** from Green Mountain; opposed the proposed change in **Rte AF**; asked for more service for Fort Logan, especially to and from the **D-Line** via **Rte 51**. Among the public attending was former RTD Director Daryl Kinton. Three RTD staff members heard the testimony and answered questions.

RTD Blake Street Offices - Wednesday, April 25, 2012

The most urgently expressed interest in the noon meeting in Downtown Denver was in support of retaining a one-seat ride on **Rtes 100X and 116X** between western Lakewood and Ken Caryl points and Civic Center Station. Six of the 26 members of the public attending named this as their concern. Alternatives were offered by some, including adding a stop at Federal Center Station or adding an unofficial Park-n-Ride at the C-470/Quincy interchange to the proposed **Rte KC**. Individuals raised issues regarding the loss of **Rte 2X** service to Morrison that can be used for hiking into concerts at Red Rocks Amphitheater, **Rte 21** travel needs of Green Mountain High School students, a potential shortage of space on **Rte 16** if customers do not switch to Light Rail, replacement of **Rte 17** service with call-n-Ride, the double transfer required to get between the new **W-Line** and the Southeast **F/H-Lines**, and a lack of capacity for wheelchair customers running into other customers on the ramp at Littleton/Downtown Station. Ten RTD staff members attended the meeting.

Conifer Library, Conifer - Wednesday, April 25, 2012

Support for the proposed West Corridor service plan as related to **Rtes CV/CS/CX** serving the Conifer area was the theme of much of the Conifer meeting. One speaker spoke in support of retaining **Rte 6X**. Other issues were raised by individuals, including requests for improvements in specific connections, interest in information about the plans for Pine Junction Park-n-Ride, and requests to go back to using glass in shelters. Twenty members



of the public, plus RTD Board Director Bruce Daly, were in attendance. Four RTD staff members participated in the meeting.

Evergreen Library, Evergreen - Saturday, April 28, 2012

The major interest of the 23 attendees was in supporting the proposed retention of through Regional **Rtes EV/ES/EX** service into Civic Center Station. Two attendees spoke in support of retaining **Rte AF** service at the Federal Center Station. Individual comments included: anxiety about security for passengers with luggage at Union Station; a request to add a round trip to Denver from Evergreen on Saturdays and Sundays; a request to run the Evergreen call-n-Ride till 9:00 p.m.; a request to extend skyRide to Evergreen; noted a need for information on how to get to the Performing Arts complex from the West Line.

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